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An Address
ON
THE PRACTICAL DIAGNOSIS OF THE DISEASES OF THE SKIN.

Delivered before the West Kent Medico-Chirurgical Society on Nov. 3rd, 1905,

BY WILLMOTT EVANS, M.D., B.S., B.Sc. LOND., F.R.C.S. ENG.,

SURGEON IN CHARGE OF THE DEPARTMENT FOR DISEASES OF THE SKIN, ROYAL FREE HOSPITAL.

GENTLEMEN,—Among the many special departments into which the wide extent of our knowledge has necessitated the division of medicine there is surely none which has been more neglected by the great body of the profession than dermatology. This fact for long appeared to me strange, for there is no other part of the body so open to observation as the skin and therefore at first sight it might be imagined that a knowledge of its diseases would be readily attained. The examination of the ear or of the eye is beset with difficulties and even the investigation of the organs of the chest depends on the correct interpretation of signs ascertained by auscultation and percussion. When there is inflammation of the lung, for instance, the physician can only ascertain the fact by various physical signs; the lung itself is hid from his view and nothing can be seen of the various stages of the inflammation—the dilatation of the vessels, the exudation from the capillaries, and the various other phenomena which go to form the complex condition called inflammation. With the skin, however, it is far otherwise. Here every stage of the process can be watched, spread out before the eyes. The dilatation of the vessels and even of the capillaries, if extensive, is visible to the naked eye or a hand lens. The exudation into the substance of the skin can be readily felt, or should the exudate be poured out near or on to the surface it may collect into vesicles, or obvious droplets, or flow away in a stream. If suppuration should occur we are not dependent for the information on thermometric indications, for the pus can be seen either pent up in pustules or as a free discharge on the surface. When, too, resolution occurs we do not have to trust to doubtful physical signs, for we can see with our own eyes the diminution of the discharge; we can see the contraction of the vessels which were before dilated; and our knowledge of the return to health proceeds *pari passu* with the process itself. Therefore a knowledge of the diseases of the skin should apparently be more widespread and more complete than the knowledge of the diseases of any other part of the body. Yet all will, I think, agree that it is not so and the explanation of this is to be found, in my opinion, in the fact that in dermatology we have a plethora of information which from its very fulness tends to overburden the mind.

There are so many differences observable in the skin that it is exceedingly difficult for those who have not devoted much attention to the subject to recognise that some of the differences are important and some of no moment. To return to my former comparison. In the lungs we can recognise during life but a few types of inflammation and we are therefore obliged to include under one name several conditions which we should perhaps be able to distinguish if we could see the morbid processes during life. In the case of the skin many slight differences are readily noticeable and so it has come to pass that the number of diseases recognised in the skin is very great. To explain more clearly my meaning I will imagine the position of the skin so modified that it becomes an internal organ. Let us suppose a large portion of the skin to be folded inwards to form a sac, so that the former superficial surface looks inwards; how many different diseases should we be able to recognise in it? We should have various symptoms and perhaps a few physical signs; the nature of the discharge from the mouth of the sac we are imagining would also assist us somewhat, but we should have little else, so that we should have to include under one name conditions essentially different, and this statement brings me naturally to the second cause of the general lack of knowledge of the diseases of the skin. It is the multitude of names. There are few skin diseases which have only one name; most have at least two and many have five or six names. Nay, more, the names of many of the diseases of the skin consist of several words; for instance, erythema induratum scrofulosorum, and this increases the difficulty of remembering the names. I am not saying that there is no excuse for this multiplicity and complexity of the names in dermatology. There is often ample excuse or even reason, but the fact remains that the nomenclature is a great deterrent to the study of the diseases of the skin. Further, not only have many skin diseases two names, but, what is worse, the same name, or two names only slightly different, may be applied to two totally distinct diseases. For instance, pityriasis rubra has nothing whatever to do with pityriasis rubra pilaris. Again, in some foreign countries—Germany, for instance—the generic name herpes is applied to the ordinary ringworm of the scalp, tinea tonsurans, as it is called in this country, which, it is hardly necessary to say, has nothing to do with herpes zoster. It is clear, then, that there are many difficulties in the way of a knowledge of dermatology, but they need not deter anyone who really cares to undertake the study of the diseases of the skin.

It is possible sometimes to treat a condition successfully, even though no diagnosis has been made; yet this is the exception, and as a general rule all satisfactory treatment depends on a correct diagnosis and thus I have chosen the diagnosis of the diseases of the skin for my subject this evening. Some diseases can be readily diagnosed. We can recognise them at once from long lasting familiarity, even as we recognise the face of a friend. Perhaps we cannot describe in exact terms the points on which the immediate recognition is based, just as we may be absolutely sure of the identity of a man we know well, even though we may not be able to say what are his distinctive features. As an example of this I may mention leprosy; a typical case of it may be recognised at a distance of many feet by those who are familiar with the disease. I do not want you to imagine for a moment that I am suggesting that treatment should be based on such a hasty diagnosis, for we should never proceed to treatment until the diagnosis is as certain as we can make it, but I wish to impress upon you the fact that familiarity with a disease may make it recognisable at a distance. Smallpox is another good example of a disease often recognisable at sight. The first point of importance in the diagnosis of a disease of the skin is to identify the primary lesion. Where should this be sought? In nearly all cases it is at the margin of a patch of the eruption that we shall find least modified the primary lesion with which the disease starts. In the centre of a patch the skin lesion will have progressed and will represent a later stage. It may then be in a more fully developed condition or retrogression may have commenced and partial recovery may have occurred, and so the condition may be unrecognisable. Papules may have merged to form patches, vesicles may have burst, and scratching or rubbing may have assisted in modifying the original condition; while at the periphery a fresh intact example of the primary lesion may have recently appeared.

When the primary lesion has been identified, whether papule, vesicle, or pustule, or whatever it may be, then its other characters must be examined. Say that it is a papule, is its outline round or angular? Is its top flat, pointed, or rounded? Does its colour disappear on pressure or is it permanent? When points such as these have been settled we have gone far towards diagnosing the disease. For to follow up the example already given, the angular, flat-topped papules of lichen planus can hardly be mistaken when typical papules are seen. The next point to remember in diagnosis is that one definite condition may have many modes of formation. To take an instance, pigmentation. It may in the first place be natural, as in the skin of a negro; in this case the pigment is situated in the lining cells of the Malpighian layer of the epidermis. Pigment is present in the skin of white people, and this pigment, small in amount though it is at the most, may be completely absent. If congenitally so the case is one of albinism, or the pigment may be removed in parts by disease; thus we find patches of excessively white skin in leucoderma, or vitiligo as it is sometimes called. In the latter case the surrounding skin is generally darker, giving the appearance of the pigment having been swept from the patch and heaped up round the margin. In the macular variety of true leprosy

very similar patches may occur, and the two conditions are often confused, especially in countries such as India, where leprosy is not rare, leucoderma being mistaken for leprosy. An important distinction and one easily applied is this—in the leprotic patches there is anæsthesia, while in the colourless areas of leucoderma sensation is unaffected.

Increase of pigment is, however, much more common than a loss of the colouring matter of the skin. This increase may be due to minute capillary hæmorrhages, as in purpura, or an ordinary skin lesion usually unpigmented may leave much pigment behind it, as, for instance, urticaria pigmentosa. The growth of a fungus in the epidermis may lead to the formation of dark patches, as in tinea versicolor or chromophytosis. Lastly, it must not be forgotten that pigmentation of the skin may be the effect of drugs, perhaps used locally, as may occur after the application of a mustard plaster, or the drug may have been administered internally, as with arsenic and silver. Lastly, pigment may be the essential part of a new growth, as in melanotic sarcoma. Thus we see that it is not sufficient to recognise the existence of deficient or excessive pigmentation; the mode of onset, the situation, and the course of the lesion must be observed before a true diagnosis is possible.

Let us take another example. A true vesicle is a small elevation of a part of the epidermis inclosing a clear serous fluid and vesicles differ chiefly one from another in the thickness of the epithelial layer forming the roof. A "button" of molluscum contagiosum to the naked eye looks not unlike a vesicle and its umbilication resembles closely the similar condition in the vesicular stage of small-pox, but a section shows that the swelling is solid and is caused by a modification of the epithelium. Scales are masses of epithelial cells ready to be cast off; they may be scanty so as only to be seen with a lens, or they may be present in enormous quantities, as in dermatitis exfoliativa. Scaliness and cracking of the palms of the hands may be merely the result of an eczematous inflammation brought about by prolonged and repeated immersion of the hands in water, as in washerwomen and bottle washers, and in this case both hands will probably be affected. A very similar condition is produced by syphilis and the affection on one hand may in this case precede the affection of the other by several weeks. Ultimately, if left untreated, the soles of the feet are liable also to be attacked. A not dissimilar thickening and cracking of the palms and soles may be caused by the prolonged administration of arsenic.

This is a convenient place to speak of the mingling of various primary lesions. For instance, erythema is the name applied typically to a mere reddening of the skin due to dilatation of the cutaneous capillaries, but we may reasonably apply the name erythema to allied conditions in which the pathological process has gone beyond, sometimes far beyond, mere erythema, for papules, rings, vesicles, nodules, and bullæ may be seen as in erythema multiforme. Nodules may be derived from various sources. For instance, in neuro-fibromatosis or Recklinghausen's disease the nodules are swellings on the nerves and their branches. In other cases nodules in the skin may be malignant in nature or they may be formed from scars, as in keloid.

Another important point that has to be considered in the diagnosis of a disease of the skin is the arrangement of the skin lesion. We may take as an example ringed eruptions. Naturally, perhaps, an idea of a tinea arises at first sight of a ringed eruption and some of the best marked rings are due to a trichophyton but many other skin diseases may appear as rings. There is a great tendency for syphilitic manifestations, especially in the secondary stage, to be circinate in character; and rings may also appear in the congenital form of the disease. Psoriasis may also be mentioned as very prone to assume the ringed form. In fact, all diseases which spread centrifugally tend to clear in the centre and so form rings, and this is especially likely to occur in disease due to the local presence of a micro-organism. When rings of any etiology meet serpiginous forms appear but they very rarely, if ever, overlap.

The situation of the disease is also of very great importance and value in diagnosis. Familiar to you all are the rough, scaly patches on the elbows and knees in psoriasis. In this case the situation is sometimes of itself sufficient to decide a doubtful diagnosis. A preference for the same situations is to be seen also in a much rarer disease, xanthoma, but in this the patches are not scaly but are yellow in colour. Another instance of situation assisting in the diagnosis is to be found in the pustules on the hands in scabies. It is, however, with the distribution of nerves that we derive perhaps the greatest assistance, as in herpes zoster, where the relation of the distribution of the disease to the area of distribution of a nerve assists us in arriving at a diagnosis, whether the nerve involved is an intercostal or, as in the less common variety, the nerve is the supra-orbital or a branch of the cervical plexus. The fact that an eruption is seen at the margin of the hairy scalp naturally suggests that it has spread from the scalp where it has arisen, and in this way it is often possible to diagnose seborrhœic dermatitis of the forehead.

The location of the redness in acne rosacea is of itself almost enough to settle the diagnosis, which is confirmed by the presence of numerous papulo-pustules. In xeroderma pigmentosum the area affected—namely, the face and arms—will suffice to show that exposed surfaces are the parts affected and therefore the exposure has had a causal connexion with the disease; in this case the agent has been sunlight which has given rise to the morbid condition. Sometimes the structure in the skin which is involved can assist in the diagnosis. When we see a crop of pustules and every pustule pierced by a hair, we may be sure that the condition is a folliculitis, in all probability set up by an external irritant. When we meet with an eruption of a very unusual type and we are told that it is of recent origin, the thought should always arise that the eruption may possibly be due to some poison, internal or external. The iodides and bromides are the greatest offenders in this respect. The presence of an unusual eruption with the coexistence of "fits" should always suggest a bromide eruption. This is an example of a diagnosis depending on collateral circumstances apparently unconnected with the eruption. Another example which I may mention was seen in a general vesicular eruption occurring in a child five years old within a fortnight of the vaccination of a baby sister. The character of the vesicles supported the reasonable diagnosis that a generalised vaccinia was present.

The possibility of a lesion of the skin being factitious should always be borne in mind. The chief characteristics of these are as follows: they usually occur in girls or young women, though I have seen a troublesome case in a young man; secondly, if the patient is right-handed the lesions are most likely to be found on the left forearm and the right leg; and thirdly, the lesions are generally longer in the long axis of the limb and often have square ends. The effect of treatment is sometimes of immense value in diagnosis, especially in suspected syphilitic lesions, but time will not permit of my going fully into this branch of the subject.

In the skin we have an additional agent in diagnosis which can hardly be employed in any other part of the body. I refer to the microscopical examination of a portion of the lesion during life. A small portion of the skin can easily be removed under local anæsthesia; it can be cut and stained and a microscopical examination may at once suffice to settle a diagnosis otherwise very doubtful. This process is sometimes called a biopsy.

I have endeavoured in this paper to point out some of the more important points on which a diagnosis of a disease of the skin may be based. Nothing but practice will give real familiarity with skin lesions and enable diagnosis to be easy, but however well acquainted one may be with the morbid appearances of the skin yet cases will not infrequently occur where the dermatologist is unable to give an exact diagnosis. Repeated observation of the same case may ultimately enable a diagnosis to be made, but a diagnosis is not always possible.

THE UNIVERSITY OF SHEFFIELD.—The council of the University has appointed Dr. Louis Cobbett, M.A., M.D. Cantab., F.R.C.S. Eng., Professor of Pathology in the University. Dr. Cobbett held the coveted John Lucas Walker Studentship at Cambridge, in which capacity as demonstrator of pathology in the University he had the advantage of working under the late Professor Roy and the late Professor Kanthack successively. His work in bacteriology includes some valuable research into the organisms causing diphtheria, while recently he has been engaged upon the study of the relations of human and bovine tuberculosis on behalf of the Royal Commission on Tuberculosis.

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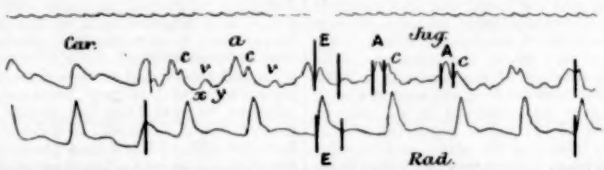
PHYSICIAN TO THE STANLEY HOSPITAL, LIVERPOOL; ASSISTANT PHYSICIAN TO THE HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, LIVERPOOL.

IN considering a case of heart disease the tendency is to lay stress rather on the nature and extent of the organic lesion and the character of the murmurs than on the actual power of the heart to do its work. The most important fact to be learnt is, of course, the area of cardiac response—the power of the heart to carry on its work and to meet stress. In the examination of an individual case, after having carefully formed an opinion as to the organic lesion, if one be present, the actual amount of hypertrophy and dilatation, the pathological nature of any lesion and the area of cardiac response, there is still a wide field for further investigation and one which ought in the next few years to yield a rich harvest in indications for treatment. I refer to the analysis of a heart's activity and the endeavour to discover in each case which of the special functions is chiefly at fault. The cardiac musculature possesses five great functions—rhythmicity or the power to produce its own rhythmic stimulus, excitability, conductivity or the power of conducting the stimulus from one muscle cell to another, contractility, and tonicity. In any case of cardiac insufficiency or irregular action of the heart one or more of these functions must be either depressed or exalted. Our views of treatment will become enlarged and our therapeutic methods more scientific and efficient in so far as we are able to appreciate these variations. Such a knowledge can only be advanced by a careful study of individual cases. As our information becomes more complete and adequate cases which before had no relationship will be found to belong to the same group and to fail in the same essential function or functions although the coarse anatomical lesions be widely different.

The function which perhaps most easily lends itself to investigation and demonstration is that of conductivity, the conduction by the muscle cells of the stimulus to contraction. We know that the heart does not contract simultaneously in all portions but that a peristaltic wave of contraction passes over it, starting "from the most automatically rhythmical tissue and travelling over the rest of the heart with varying speed." "The contraction of the heart signifies the passage of a contraction wave from one end of the heart to the other over muscular tissue of varying power of conductivity." The conduction is least in those portions of the musculature most nearly approaching the embryonic type of muscle, such as the fibres at the mouth of the great veins, in the auricular canal, and in the conus arteriosus. We know also that with each systole of the heart all the functions of the muscle fibres are temporarily abolished and that the process of recovery of function is relatively slow in cardiac muscle fibre. Normally the recovery in all the functions runs parallel, so that when sufficient "stimulus matter" has accumulated to initiate a contraction it finds the conducting power of the muscle able to transmit it at the normal rate. If from any cause the conductivity is depressed there is increased delay between the systole of the auricle and that of the ventricle. If the muscular fibres are in such a condition that they require, say, one second to regain their full conducting power, then a stimulus originating in the auricle every three-fifths of a second will not have allowed the fibres time to recover themselves and the passage of the stimulus will accordingly be delayed. If in such a case the auricular systole does not occur more frequently than every second then the delay between auricular and ventricular systole will be normal because the muscular fibres have been allowed full and adequate time for repair.

Clinically our method of estimating the conductivity in any case is by measuring the time between auricular and ventricular systole as recorded in the tracing of the venous pulse. For example, in the tracing *Fig.* 1 the space A between the two upright lines shows the time between the beginning of auricular systole *a* and the ventricular systole as demonstrated by the pulse in the carotid artery, causing the small wave *c* on the tracing. As the presphygmic time has not been taken into account this period *a c* does not accurately represent the delay between auricular and ventricular systole, but as the error is relatively constant we may take this *a c* interval as indicating the time required by the stimulus to pass along the muscle fibres from the auricle to the ventricle—in other words, to stand as our index of conductivity. Normally this *a c* interval is one-fifth of a second, as in Fig. 1. In the patient whose record is to follow the function most impaired when he first came under observation was that of conductivity and my aim is to show the variations in this function while under observation and treatment; the effect of these variations on the pulse, producing sometimes a bradycardia, at others an arrhythmia; and the result of certain drugs in influencing the cardiac rhythm and the area of cardiac response. Later the function of excitability of the cardiac muscle became impaired and gave rise in its turn to a bradycardia and a condition of arrhythmia.

FIG. 1.



Tracing to show the normal or auricular type of venous pulse. The space E indicates in all the tracings the period of ventricular systole during which the semilunar valves are open, the sphygmic period. The wave *a*, preceding the period E, can only be due to the systole of the right auricle. The fall *x* is due to the diastole of the auricle causing a rush of blood out of the jugular vein into the auricle, and the wave *c* is due to the impact of the carotid pulse. The space A represents the *a c* interval and indicates the time taken by the stimulus to pass from the auricle to the ventricle. It is normally one-fifth of a second. The time marker records one-fifth of a second. This applies to all the tracings.

The patient, a man, aged 65 years, was admitted to the Stanley Hospital under the care of Dr. Whitford who very kindly transferred the case to me. The patient complained of stiffness in the right side over the liver and in the front of the chest. The family history was unimportant. He was on active service in India for nine and a half years and since then he has acted as dock labourer. Previously to becoming a soldier his work was hard; latterly it has been easier though entailing considerable exposure. In the use of alcohol he has always been moderate but for 50 years he has smoked heavily. He denies having had syphilis or gonorrhœa and he has never suffered from typhoid fever or acute rheumatism. When in the East Indies he suffered for seven years from occasional severe attacks of "fever." For the last 12 years he has been liable to recurrent attacks of indigestion. For eight years he has been aware of the fact that his pulse was slow and for two and a half years he has experienced some degree of shortness of breath on exertion; this dyspnœa has been steadily increasing. On Dec. 24th, 1904, he was attacked by gastritis and was "off work" for six weeks, during which time he was insensible for six days and six nights. Since this attack he has been at work, though steadily becoming less fit for it. He was admitted as an in-patient on June 8th, 1905. On admission he was found to be a moderately healthy looking man, contented, and well-nourished. There was no dropsy or jaundice. His

temperature was normal and his lips were a little blue. There were pain and flatulence after food as well as some heartburn. The bowels were very constipated. The abdominal viscera were normal. There was nothing to indicate any disease of the kidneys. There was no marked emphysema. He has had a slight cough for years but with no expectoration. Dyspnœa has gradually developed. He could only walk ten steps along the level at a time and could not go up stairs other than very slowly. He could lie flat in bed and sleep in that position. There has been, and is, a marked sense of giddiness accompanied by pain in the temples. For the past six weeks this pain has caused him to wish to shut his eyes. The pain became worse every evening about 9 o'clock; it continued through the night and became less severe in the morning, while during the day it was milder. For six weeks dizziness has been continuously present; this was less noticeable at night. He has had no sensation of impending faintness nor has there been any palpitation.

On June 24th the patient's pulse was 32 per minute and regular in force and frequency. The blood pressure was 200 millimetres of mercury (systolic) and from 100 to 120 (diastolic). The arteries were thickened and somewhat tortuous. The apex beat was neither visible nor palpable. The heart was covered by lung and extended two inches to the right and five and a quarter inches to the left of the middle line, reaching above to the upper border of the third left costal cartilage and below to the seventh left rib. On auscultation the cardiac sounds were everywhere faint; at the apex there was a faint systolic bruit not conducted into the axilla; the first sound was inaudible, the second neither accentuated nor reduplicated. Both murmur and second sound were heard distinctly over the fourth left space towards the sternum. Over the aortic area a faint systolic murmur was audible with no alteration of the second sound. On carefully auscultating over and within the apex one occasionally heard during the diastole of the ventricle a faint whiff separated by a distinct interval from the second sound. A peculiar sequence of waves was observed in the veins of the neck. About the time of the radial pulse two waves occurred, one immediately following the other, and between every such a pair and the next pair of coupled waves there was a single wave. The faint whiff which was occasionally heard as noted above was observed to be synchronous in time with this single wave.

On the day after admission simultaneous tracings were taken of the radial and jugular pulses. In Fig. 2 we see that the auricle is beating twice as frequently as the ventricle, only every second systole of the auricle being able to initiate a ventricular systole. But the tracing shows more: it shows that the *a c* interval is much longer than normal, that A is two-fifths of a second instead of one-fifth, indicating delay in the passage or conduction of the stimulus from the auricle to the ventricle; in other words, depression of the function of conductivity. The depression of conductivity is so marked that not only is there considerably increased delay in the passage of the stimulus from the auricle to the ventricle, as shown by the lengthened *a c* interval, but there is also complete failure of the ventricle to respond to every other auricular systole. This failure is due to the fact that subsequently to the passage of the stimulus the conductivity is so much further depressed that the muscle fails entirely to transmit the second stimulus. The condition is one of heart block and is almost identical with the second of my two cases of bradycardia published in the *British Medical Journal*.[1]

The treatment consisted in light nutritious diet, mercurial purgation, and rest in bed. For a few days the patient was put on large doses of iodide of potassium and tabellæ trinitrini. It was then decided to see what effect the administration of atropine would have on the conductivity. He was accordingly, on June 17th, ordered tincture of belladonna in seven-minim doses every four hours for a week. As there was no change in the pulse the dose was increased to 15 minims, and five days later to 20 minims, every four hours. There was still no change in the pulse so the amount was further increased till on June 30th he was taking two drachms in the 24 hours. This large amount of atropine did not appear to have any effect on the pulse-rate or on the frequency of the auricular systole.

On July 4th the amount of the tincture of belladonna was increased to two drachms and 40 minims in the 24 hours. The patient felt somewhat better. His pupils were not markedly dilated, but there was some dryness of the throat. On the 7th at 1.30 P.M. he was given one and a half drachms of the tincture of belladonna, followed in an hour by half a drachm and then later by $\frac{1}{100}$ths of a grain of atropine by the mouth. The pulse frequency did not increase beyond 36 per minute, but it was noticed that there was a slight irregularity (see tracings, Figs. 3, 5, 6) and also that the venous pulse in the neck became much larger and more forcible. He received no more belladonna and on the 9th was ordered one grain of sodium nitrite every four hours. On the 11th, after the patient had walked about, the pulse-rate was 40, which dropped to from 32 to 36 under the influence of a short rest. It had regained its old rhythm and an *a c* interval of two-fifths of a second. Tracings were taken similar to Fig. 2. The patient felt much better, the headache and giddiness had disappeared, and he was discharged "improved."

An examination of the tracings taken while the patient was under the influence of atropine reveals a most interesting condition.[2] In Fig. 3 we have a greatly increased frequency of the auricular systole. The auricle is seen to be beating regularly with a frequency of from 85 to 90 beats per minute as compared with 64 beats per minute in Fig. 2. The record of the radial pulse shows a peculiar arrhythmia, the cause of which is clear on analysing the tracings. With increased frequency of auricular beats the length of auricular diastole is diminished and the time allowed to the cardiac muscle to recover its conductivity is correspondingly shortened. In the tracings the result of this is seen by the effect on the *a c* intervals. The ventricles, instead of responding to every second auricular systole as in Fig. 2, can now in a number of instances only respond to every third. Fig. 4 is a diagram built on the plan of Wenckebach and Mackenzie; it demonstrates clearly what is taking place. The numbers indicate the *a c* intervals which are drawn to scale and correspond to the numbers in Fig. 3. We see that the *a c* interval 1 is very prolonged, the time taken for the stimulus to pass from the auricle to the ventricle being three-fifths of a second; in 2 the *a c* interval is shorter, in 3 shorter still, and in 4 it is practically normal, being about one fifth of a second. The cause of this gradual shortening of the *a c* interval is found in the fact that the ventricle has only been responding to every third auricular systole. The muscular fibres have for that reason had more time in which to recover their conductivity. This function has recovered to such a degree in 4 that following it the ventricle responds to the second auricular systole, with the result that again the *a c* interval is abnormally prolonged because the fibres, though able to conduct the stimulus, were barely able to do so, having not had sufficient time to regain their normal power. The *a c* intervals 6, 7, and 8 show the steady recovery of conductivity, the ventricle responding to every third auricular systole. This is a beautiful demonstration of the recovery of a function as the result of rest and also of the depression of that function as the result of activity. Figs. 5 and 6 were taken at the same time as Fig. 3 and are valuable as corroborative evidence of depressed conductivity. These tracings are good examples of the value of simultaneous records of the venous and radial pulses in explaining irregularities due to an abnormal condition of cardiac muscle.

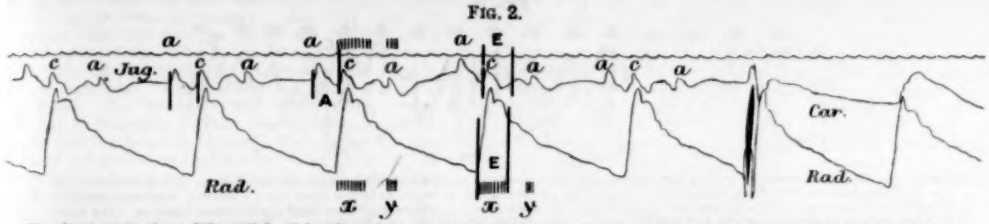
Gibson has published a tracing in his paper on bradycardia showing a very similar condition—Case 1, p. 15. He has kindly allowed me to reproduce a copy of it (Fig. 7). On analysing this tracing we find that the ventricle is rhythmically responding first to every fourth auricular systole, then to every third, and that when the ventricle responds to the third auricular systole the *a c* interval is thrice as long as when it responds to the fourth—the short extra time allowed the fibres for recovery, equal to the duration of an auricular systole and diastole, being sufficient to restore the conductivity to normal.

On Sept. 18th our patient was again admitted complaining chiefly of severe headaches and giddiness when walking about. Under sodium nitrite (one and a half grains thrice daily) he steadily improved. On the 26th there was still frontal and temporal headaches increased by the recumbent posture. There was troublesome insomnia and any exertion

[1] Brit. Med. Jour., Oct. 21st, 1905.

[2] Dr. W. T. Ritchie has very recently published in the Proceedings of the Royal Society of Edinburgh, vol. xxv. (p. 1085), an interesting case of complete heart-block with tracings, showing the effects of large doses of atropine. The auricular frequency was greatly increased, the ventricular unaffected.

FIG. 2.



Simultaneous tracings of the radial and jugular pulses, showing that the *a c* interval (space A) is twice the normal period (two-fifths of a second in place of one-fifth), indicating a delay in the passage of the stimulus from auricle to ventricle. It shows also that only every other systole of the auricle is followed by a systole of the ventricles. *x* = murmur due to ventricular systole, mitral regurgitation; *y* = murmur produced by auricular systole discharging blood into an incompletely filled ventricle. The time marking here represents one-fifth of a second.

FIG. 3.

Tracing from the same patient after the administration of large doses of belladonna. The upper tracing is from the jugular vein and shows an increased frequency in auricular systoles. The numbers indicate the *a c* intervals. In 1 and 5 it is lengthened to three-fifths of a second; in 2, 3 and 4 it gradually diminishes until in 4 it is almost normal; in 6, 7, and 8 it again diminishes until in 8 it is quite normal. The radial pulse shows an arrhythmia. The pulses recorded under the figures 2, 3, 4, 6, 7, and 8 are longer than that under figure 5, the reason being that in the former the ventricle is responding to every third auricular systole while in that under the figure 5 it responds to the second systole of the auricle.

FIG. 4.

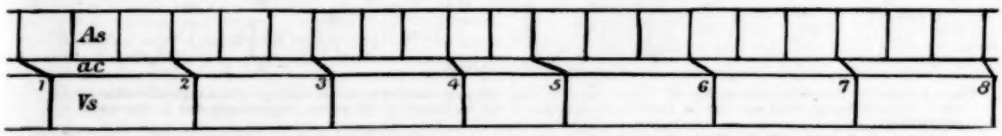
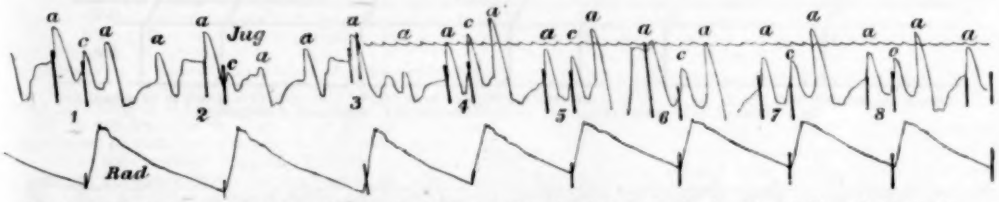


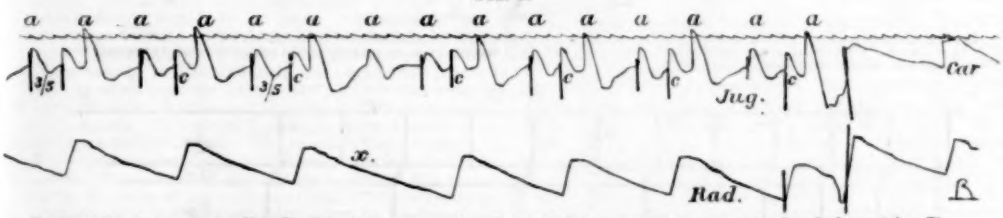
Diagram constructed from Fig. 3. *As* = auricular systoles. *ac* = the *a c* interval numbered as in Fig. 3. *Vs* = Ventricular systoles. The diagram shows the cause of the irregularity of the radial pulse and demonstrates the recovery of the function of conductivity with rest.

FIG. 5.



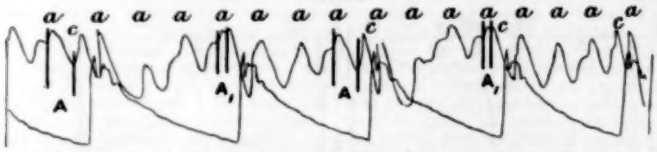
Tracing from the same patient at the same date as Fig. 3. The upper tracing is from the jugular vein and shows the increased frequency of auricular systole, also the steady recovery of conductivity as shown in the *a c* intervals 1, 2, 3, the recovery being possible in these instances only because the conducting fibres transmit every third stimulus and thus experience a longer period of rest. Throughout the remainder of the tracing the conducting fibres transmit every second stimulus and the *a c* interval is lengthened, the intervals 4, 5, 6, 7, and 8 being a little over two-fifths of a second.

FIG. 6.



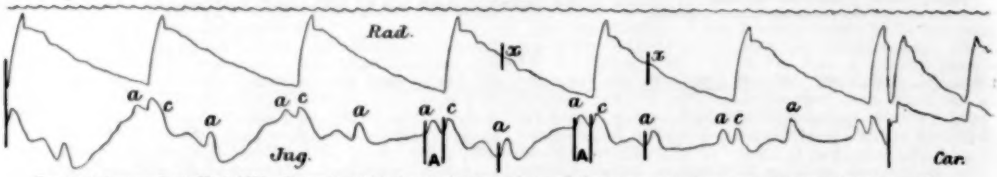
Tracing taken at same date as Figs. 3 and 5. With one exception the ventricle is responding to every second auricular systole. The exception occurs in the middle of the tracing at *x*, where the ventricle is seen to refuse the second and respond to the third auricular systole. The tracing demonstrates marked depression of conductivity and also a distinct improvement in the *a c* interval as the result of the slightly longer rest occasioned by the refusal of the auricular canal to transmit the stimulus due to the second auricular systole.

FIG. 7.



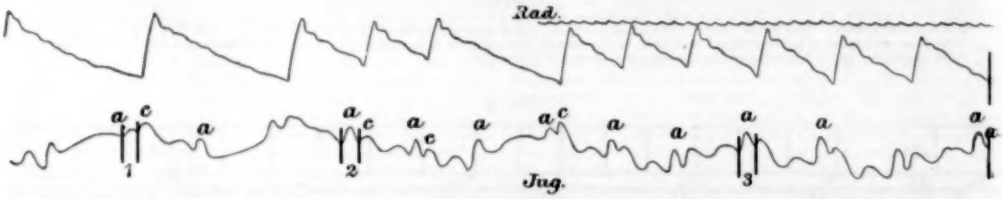
After Gibson. The upper tracing is from the jugular vein and shows the presence of numerous auricular systoles to every ventricular. The ventricle responds to every third or fourth auricular systole; when it responds to the third the *a c* interval A is long, probably three-fifths of a second; when it responds to the fourth the *a c* interval A_1 following is one-third the previous interval. The extra rest has been sufficient to restore the conductivity. The radial tracing shows depressions or little waves in its down stroke caused by systoles of the left auricle.

FIG. 8.



Tracing taken on Sept. 22nd, 1905. Shows heart block and also an *a c* interval almost normal. The ventricle responds to every other auricular systole. The condition is one of bradycardia due to depression of excitability. At *x* in the radial tracing one sees the slight rise followed by the dip caused by the systole of the left auricle. See also Fig. 7.

FIG. 9.



Tracing taken on the same date as Fig. 8. Shows the occasional dropping out of ventricular systoles with a normal conductivity, the *a c* interval being about one-fifth of a second irrespective of the frequency of the pulse. Arrhythmia due to depression of excitability.

FIG. 10.

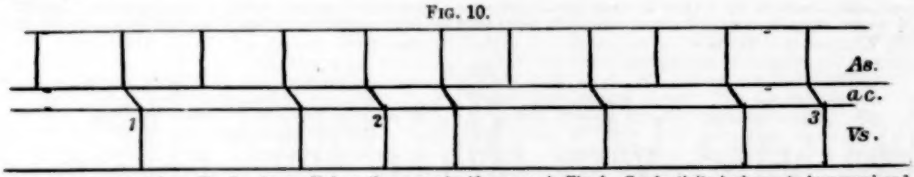
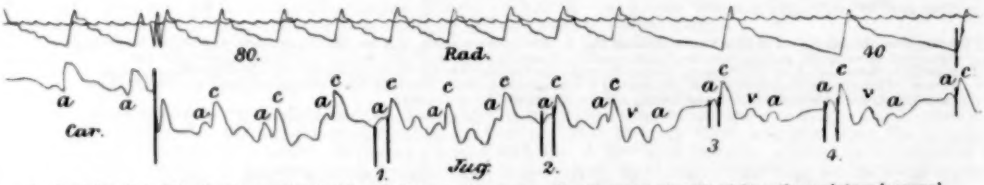


Diagram constructed from Fig. 9. *As*, *ac*, *Vs* have the same significance as in Fig. 4. Conductivity is shown to be normal and the *a c* interval is the same throughout. Arrhythmia caused by depression of excitability.

FIG. 11.



Tracing taken Oct. 19th showing sudden halving of the pulse frequency. No depression of conductivity; the *a c* interval normal throughout. Depression of excitability is shown by the refusal of the ventricle, or possibly of the auriculer canal, to respond to a stimulus normally conducted.

FIG. 12.

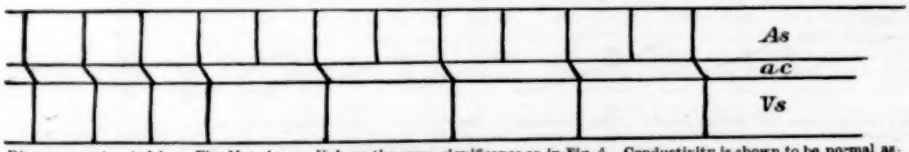


Diagram constructed from Fig. 11. *As*, *ac*, *Vs* have the same significance as in Fig. 4. Conductivity is shown to be normal as the *a c* interval. Bradycardia caused by depression of excitability.

caused dyspnœa. The pulse varied greatly in frequency, it being sometimes 30 and sometimes 60 per minute and occassionally beat irregularly. At this time the more frequent rate was brought on by the patient lying down, by deep breathing, or by the excitement of having his pulse recorded. Many traces were taken, of which Figs. 8, 9, and 11 are examples. On the 29th the pulse was of the same character. The headache was much more severe though varying in intensity. When the headache was severe it was noted that the face was flushed. The patient was accordingly ordered adrenalin hydrochloride (1 in 1000) in 20 minim doses three times a day. From this point onward there was marked improvement.

On Oct. 19th it was noted that the headache was greatly ameliorated, the patient's colour was good, his appetite and digestion were excellent, and his area of cardiac response was greatly increased. On that date he was able to hurry up a hill without any discomfort. His pulse-rate varied, sometimes being 30 or 40 per minute and at other times between from 60 to 80 per minute. We examined him with the x rays and were able to see that there was some dilatation of the descending portion of the arch of the aorta. At the beginning of the examination the heart frequency was 80 beats per minute and while we were looking at the shadow on the screen the frequency suddenly dropped too 40, or half the previous rate. Fig. 11 shows a similar occurrence. During the long pauses which now occurred the ventricles were seen to remain motionless. We looked carefully to see any sign of auricular systole but failed. On Nov. 11th his condition was much the same, the pulse varying in a similar manner. Sir James Barr was present when the examination with the x rays was made and suggested the administration of syrupus iodi tannici combined with the adrenalin hydrochloride.

Remarks.—These three tracings, Figs. 8, 9, and 11, show a remarkable change from the earlier ones and are well worth careful analysis. Looking at Fig. 8 we find that there is undoubted evidence of heart block, the ventricle only responding to every other systole of the auricle. At first sight the explanation which suggests itself is that we are still dealing with a depression of conductivity of such a degree that the conducting power has entirely recovered by the time that the second auricular systole occurs and the *a c* interval is accordingly normal. The first auricular systole, however, finds the conductivity of the fibres in the process of recovery but still exhausted by the previous contraction and thus unable to transmit an impulse. A heart block occurs and every other ventricular systole drops out with the result that there is a bradycardia. Fig. 9 demonstrates that the above explanation is incorrect. There we see that the *a c* interval is normal throughout whether the ventricle responds to each auricular systole or every second auricular systole. Fig. 11 shows the same condition but in a more marked degree.

On analysing a case of heart block due to depression of conductivity it is invariably found that the *a c* interval varies according to the time given for rest—this is demonstrated in the tracings in Figs. 3, 5, 6, and 7. A clear appreciation of this fact compels us to dismiss the supposition that the tracings Figs. 8, 9, and 11 indicate a depression of conductivity as the cause of this heart block. The *a c* interval remains the same whether the period of rest is one or two seconds as in Fig. 9, or four-fifths or eight-fifths of a second as in Fig. 11. As a possible explanation it may be advanced that as a result of extrinsic nervous influences playing on the heart the conductivity is suddenly and seriously depressed to such an extent as to block completely the passage of every other stimulus. This is to me most improbable. A slight change in conductivity would be at once demonstrated by a lengthening of the *a c* interval, not by a serious block. In the tracings Figs. 8, 9, and 11 it is, however, block or nothing. If, therefore, as is demonstrated, the conducting power is normal, to what must we ascribe the block? The power to initiate the stimulus is normal, the contractility of the musculature is normal, the tonicity is probably normal, and conductivity is practically normal. We are compelled, therefore, to conclude that the remaining function of excitability is the one impaired. Depression of excitability exists in this patient either in the fibres of the auricular canal or of the ventricle; the consequence is that a stimulus normally produced and normally conducted fails under certain conditions to obtain a response from these fibres.

The evidence, such as it is, favours the view that the depression of excitability is situated in the musculature of the ventricle. On carefully measuring the *a c* intervals in Figs. 8 and 9 we find that their duration is a little over one-fifth of a second whether the ventricle beats at 60 or 30 per minute. There is therefore a very slight depression of conductivity, not, however, of such a degree as to invalidate in any way the foregoing argument. Now, if through depression of excitability the auriculo-ventricular fibres had failed to respond to the stimulus reaching them they would certainly have attained the normal speed of conductivity by the time the next auricular stimulus reached them and the *a c* interval would have been one-fifth of a second only. Figs. 3 and 5 show that, given a sufficient length of time, these fibres have the power of complete recovery. The inference is, therefore, that these fibres did respond to every stimulus, that they conducted it to the ventricle, and that there it failed on occasion to elicit a response. We have then a condition of heart block due to depression of the function of excitability. This function is here in a state of unstable equilibrium; mental excitement, alteration of posture, and deep breathing all tend to alter the extent of the depression and thus to vary the frequency of the ventricular systole.

Summary in conclusion.—We have in this case a condition of bradycardia due to heart block. When the patient was first seen the block was caused by depression of conductivity; later the conductivity became practically normal and the block which persisted was found to be caused by depression of excitability. No similar case has been recorded. The action of atropine was to increase the frequency of the stimulus production but had no influence on the power of conductivity. Sounds were heard during the diastolic phase of the ventricles; they were synchronous with the wave in the jugular vein caused by the systole of the right auricle. The assumption seems justifiable that the sounds were produced by the auricle in its systole. The depression of the conductivity and excitability of the myocardium is probably due to impaired metabolism, secondary to an insufficient blood-supply, the result of arterio-sclerotic changes in the coronary arteries. The excitability of the musculature was unstable, possibly as a result of nervous influences such as mental excitement.

Liverpool.

ON THE RELIEF OF CERTAIN HEADACHES BY THE ADMINISTRATION OF ONE OF THE SALTS OF CALCIUM.

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THERE occurs frequently in women, and occasionally in men, a type of headache which commonly presents the following characteristics: 1. It is present and most severe on waking and tends to lessen in intensity or altogether disappear in from one to six hours. 2. It usually manifests itself as a dull heavy ache or as a frontal or temporal throbbing. Less often it is occipital, vertical, or unilateral. Infrequently it is neuralgic. 3. In its most typical form it is exceedingly chronic, often of several years' duration, and most intractable. It also exhibits itself as the common occasional headache to which many people are subject. 4. *It is associated with a deficient coagulability of the blood.* The subjects of the chronic form of this headache are usually of the lymphatic type. The expression is heavy and listless. The face is full and the eyes are often puffy. Some anæmia is the rule and it varies in intensity from a slight paleness to an actual chlorosis. The whole bearing exhibits mental and physical lassitude. Hereinafter the term "lymphatic type of headache" will be understood to refer to the above-described cephalalgia.

It is convenient to consider at this point certain symptoms commonly met with, and of the following several or many are usually found associated with the lymphatic headache.

TABLE I.—*Setting Forth the Chief Associated Symptoms of 48 Cases of Lymphatic Headache.*

Symptoms.	Number of cases.
Pain after food	23
Œdema either in the face or extremities ...	21
Shortness of breath	22
Chilblains or urticaria	8
Neuralgia	4

1. *Alimentary.*—Anorexia, nausea, pain after food ("heartburn"), and constipation. The last is the rule.
2. *Respiratory.*—Cough and shortness of breath; rarely expectoration.
3. *Cardiac, &c.*—Palpitation and hæmic murmurs. Full soft pulse.
4. *Genito-urinary.*—Slight albuminuria; amenorrhœa, menorrhagia, or dysmenorrhœa.
5. *Cutaneous and subcutaneous.*—Chilblains, urticaria, and œdema. The last manifests itself more commonly as a morning fulness beneath the eyes and less frequently as an œdema of the feet and ankles or legs.

chilblains, urticaria, certain œdemas,[1] and "physiological" albuminuria.[2] He has shown that the pathological basis of these conditions is a lowered coagulability of the blood, dependent as a rule upon a deficiency of the salts of calcium in the blood. He conceives that such altered properties of the circulating medium conduce to transudation of the plasma from the blood-vessels into the lymph spaces. This morbid process he terms "serous hæmorrhage" and it is this serous hæmorrhage which determines in the skin an urticaria; in the subcutaneous tissues certain œdemas and chilblains; and in the kidney physiological albuminuria.

The association in a patient (Case 1, Table III.) of severe chronic headaches and of a troublesome urticaria along with deficient coagulability of the blood, and further the vanishing of the headaches and the urticaria on treatment with calcium chloride, suggested to me that serous hæmorrhage might also be the basis of these headaches and led me to a further investigation. The results of this investigation are included in Column 4, Table III., where it will be seen that 10 out of 14 cases had a lowered coagulability of the blood and that two cases (Cases 1 and 10), which alone were investigated in this regard, showed a deficiency in the normal amount of calcium salts present in the blood. Further, the exhibition of a salt of calcium (which was undertaken in 10 cases of lymphatic headache definitely shown to have a lowered

TABLE II.—SHOWING THE EFFECT OBTAINED UPON THE BLOOD AND SYMPTOMS IN THREE CASES OF LYMPHATIC HEADACHE ASSOCIATED WITH CHILBLAINS—*A*, BY THE ADMINISTRATION OF A SALT OF CALCIUM (HEADACHES AND CHILBLAINS DISAPPEARED); *B*, BY THE DECALCIFICATION OF THE BLOOD BY THE ADMINISTRATION OF CITRATE OF POTASSIUM (BOTH HEADACHES AND CHILBLAINS RETURNED); AND *C*, BY A SECOND TIME ADMINISTERING A SALT OF CALCIUM (HEADACHES AND CHILBLAINS AGAIN DISAPPEARED).

Date.	Patient (vide Table III.).	Coagulation time of the blood.	Treatment.	Effects of treatment upon the symptoms.
14/10/05	Case 9	2 mins. 0 sec.	Nil.	Headaches and chilblains present.
27/10/05	,, 11	2 ,, 0 ,,		
27/10/05	,, 12	1 min. 30 secs.		
15/10/05	,, 9	—	15 grains of calcium lactate, t.d.s.	—
28/10/05	,, 11	—	,, ,, ,,	—
28/10/05	,, 12	—	,, ,, ,,	—
3/11/05	,, 12	0 min. 30 secs.	—	Headaches and chilblains have disappeared.
7/11/05	,, 9	1 ,, 5 ,,	—	
7/11/05	,, 11	1 ,, 7 ,,	—	
7/11/05	,, 12	1 ,, 20 ,,	—	
7/11/05	Cases 9, 11, 12	—	Calcium lactate stopped.	—
8/11/05	,, 9, 11, 12	—	20 grains of citrate of potassium, t.d.s.	—
10/11/05	Cases 9, 11	—	—	Chilblains have returned.
10/11/05	Case 12	—	—	Headaches and chilblains returned.
11/11/05	,, 11	—	—	Headache returned.
12/11/05	,, 9	—	—	Headache first time in four weeks.
13/11/05	,, 9	2 mins. 0 sec.	—	—
13/11/05	,, 11	2 ,, 15 secs.	—	—
13/11/05	,, 12	2 ,, 0 sec.	—	—
13/11/05	Cases 11, 12	—	Citrate of potassium stopped.	—
14/11/05	,, 11, 12	—	15 grains of calcium lactate, t.d.s.	—
18/11/05	Case 9	2 mins. 30 secs	(On citrate of potassium for ten days.)	Headaches, chilblains and pain after eating all present.
18/11/05	,, 9	—	Citrate of potassium stopped. Calcium lactate begun. 15 grains of calcium lactate, t.d.s.	—
14/11/05	,, 12	—	,, ,, ,,	—
14/11/05	,, 11	—	—	—
18/11/05	,, 9	—	15 grains of calcium lactate, t.d.s.	—
24/11/05	,, 12	1 min. 15 secs.	—	Headaches and chilblains gone.
28/11/05	,, 11	1 ,, 10 ,,	—	,, ,,
28/11/05	,, 9	1 ,, 30 ,,	—	Headaches, chilblains, and pain after food gone.
7/12/05	,, 9	1 ,, 15 ,,	—	

6. *Central nervous system and mental.*—The sleep is usually heavy but the patient wakes less rested than before going to bed, or the sleep may be very disturbed. Irritability combined with languor is characteristic. All degrees of mental depression are found.

PATHOLOGY.

In a series of communications Professor A. E. Wright has reported his investigations into the pathology especially of

[1] A. E. Wright: Remarks on Methods of Increasing and Diminishing the Coagulability of the Blood, Brit. Med. Jour., July 14th, 1894; Treatment of Hæmorrhages and Urticaria, THE LANCET, Jan 18th, 1896, p. 153; On the Association of Serous Hæmorrhages with Conditions of Defective Blood Coagulability, THE LANCET, Sept. 19th, 1896, p. 807; On the Pathology and Treatment of Chilblains, THE LANCET, Jan. 30th, 1897, p. 303; Discussion on Blood in Disease, Transactions of the Pathological Society of London, 1900.

[2] Wright and Ross: On the Discrimination of "Physiological" Albuminuria from that Caused by Renal Disease, THE LANCET, Oct. 21st, 1905, p. 1164.

TABLE III.—GIVING IN DETAIL 14 CASES OF LYMPHATIC HEADACHE TREATED BY ONE OF THE SALTS OF CALCIUM AND SHOWING THAT THESE SALTS DO CONTROL THE SYMPTOMS AND MODIFY THE BLOOD.

No. of case.	Sex, age, and date.	Clinical data and treatment.	Preliminary examination of blood.	Effect of administration of salts of calcium— On the blood.	On the symptoms.	Remarks.
1	Female, aged 38. 7/4/05.	Headaches of lymphatic type for past three or four years almost every morning. Urticaria (severe) on least indiscretion of diet. 15 grains of calcium chloride t.d.s. for four weeks.	Coagulation time of blood,* 1 min. 45 secs. Minimum concentration of ammonium oxalate to obtain decalcification† 1 in 1500.	Three weeks after treatment: coagulation time of blood, 1 min. 30 secs. Minimum concentration of ammonium oxalate to obtain decalcification, 1 in 800.	Headaches and urticaria much less after two weeks on calcium chloride and quite gone after three weeks.	—
2	Female, aged 18. 29/4/05.	Headaches of lymphatic type of several months' duration almost every day. Pain after eating; constipation; eyes puffy in morning; great physical and mental lassitude; amenorrhœa; moderate anæmia. 20 grains of calcium lactate t.d.s. for four weeks.	Coagulation time of blood, 1 min. 25 secs.	One week after treatment: coagulation time of blood, 1 min. 25 secs. Four weeks after treatment: coagulation time, 1 min. 15 secs.	After one week's treatment headaches and pain after eating much less. Four weeks after beginning treatment headaches, pain after eating, puffiness of eyes gone; also lassitude General condition good. Patient well five weeks later.	Previously to treatment with calcium patient had a course of iron—hence the comparatively high coagulability.‡ In this case the anæmia became less during treatment.
3	Female, aged 20. 27/4/05.	Headaches of lymphatic type almost continuously six months Pain after eating; constipation; dyspnœa; amenorrhœa; œdema of conjunctiva and of feet and legs to knees. 15 grains of calcium lactate t.d.s. for two and a half months.	Coagulation time of blood, 2 mins. Red blood corpuscles: 4,800,000 per c.mm. Hæmoglobin: 60 per cent.	Two weeks after treatment: coagulation time of blood, 1 min. 37 secs. Red blood corpuscles, 5,460,000 per c.mm.; hæmoglobin, 95 per cent. Two and a half months after treatment: coagulation time of blood, 1 min. 15 secs. Red blood corpuscles, 5,100,000 per c.mm.; hæmoglobin, 100 per cent.	Two weeks after treatment: headaches and pain after eating gone. Dyspnœa and œdema much less. Three weeks after treatment: menstruated for first time in four months. Two and a half months later: all symptoms of ill-health gone; menstruation had occurred normally.	Anæmia was definitely controlled. A subsequent course of liquor ferri perchloridi had no appreciable effect either on the blood or on the symptoms.
4	Female, aged 15. 17/5/05.	Headaches of lymphatic type almost every morning (six months). Cough; dyspnœa; constipation; eyes puffy; considerable anæmia. 15 grains of calcium lactate t.d.s. for seven weeks.	Coagulation time of blood, 1 min. 50 secs.	One week after treatment: coagulation time of blood, 1 min. 15 secs. For the succeeding six weeks it remained about 1 min. 30 secs.	Two weeks after treatment: headaches much less in frequency and intensity. Dyspnœa and œdema less. One month after treatment no headaches for preceding week; œdema gone; dyspnœa almost gone. General condition much improved.	Anæmia here was considerable. It was slightly lessened while under treatment with calcium. A subsequent course of iron had little if any effect on the anæmia.
5	Female, aged 25. 3/6/05.	Headaches of lymphatic type of several months' duration. Puffiness of eyes and feet; dyspnœa; great languor; considerable anæmia (nephritis excluded). 15 grains of calcium lactate t.d.s. for five weeks.	Coagulation time of blood, 1 min. 50 secs.	One week after treatment: coagulation time of blood, 1 min. 37 secs. Two weeks after treatment: coagulation time of blood, 1 min. 22 secs. Four weeks after treatment: coagulation time of blood, 1 min. 20 secs.	One week after treatment was begun headaches much less. Two weeks after treatment headaches almost gone; œdema less. Four weeks after treatment no headaches or œdema; very slight dyspnœa on exertion.	—
6	Female, aged 30. 9/5/05.	Headaches of lymphatic type, at times neuralgic, almost continuously for two years. Constipation; menorrhagia; bleeds from gums occasionally. 20 grains of calcium lactate t.d.s.	Coagulation time of blood, 1 min. 52 secs.	One week after treatment: coagulation time of blood, 35 secs.	One week after treatment was begun headaches had been gone for preceding two days and remained gone for three weeks (duration of treatment two weeks).	Previously to treatment with calcium patient had had a course of iron without relief of symptoms.
	29/6/05.	Returned with relapse.	Coagulation time of blood, 1 min. 52 secs.	—	Again relieved by administration of calcium lactate.	—
7	Female, aged 26. 27/6/05.	Headaches of lymphatic type almost every day for several months. No constipation; puffiness of eyes in morning; some anæmia (had pulmonary tuberculosis also). 20 grains of calcium lactate t.d.s. for four weeks.	Coagulation time of blood, 1 min. 52 secs.	One week after treatment: coagulation time of blood, 1 min. Two weeks after treatment: coagulation time of blood, 1 min. 05 secs.	One week after treatment was begun headaches and œdema much less. Two weeks after treatment headaches and œdema gone. Both remained absent for several succeeding weeks.	—
8	Female, aged 19. 20/5/05.	Headaches of lymphatic type almost continuous for five months; shortness of breath; cough; pain after eating; constipation; puffiness of eyes in morning; great languor; considerable anæmia (chlorosis). 20 grains of calcium lactate t.d.s. for three months.	Coagulation time of blood, 1 min. 37 secs.	Two weeks after treatment: coagulation time of blood, 1 min. 37 secs. Three weeks after treatment: coagulation time of blood, 1 min. 22 secs. Four weeks after treatment: coagulation time of blood, 1 min. 30 secs.	Two weeks after treatment: headaches slight and infrequent during preceding week. Dyspnœa and puffiness much less. Has not felt so well for six months. Three weeks after treatment: headaches, dyspnœa, cough, and puffiness of eyes gone, and remained so for three months after beginning of treatment. Anæmia unaltered.	Patient had been under treatment with iron; note that the blood coagulability is but slightly diminished.

TABLE III.—GIVING IN DETAIL 14 CASES OF LYMPHATIC HEADACHE TREATED BY ONE OF THE SALTS OF CALCIUM AND SHOWING THAT THESE SALTS DO CONTROL THE SYMPTOMS AND MODIFY THE BLOOD.—*(Continued.)*

No. of case.	Sex, age, and date.	Clinical data and treatment.	Preliminary examination of blood.	Effect of administration of salts of calcium—		Remarks.
				On the blood.	On the symptoms.	
9	Female, aged 36. 14/10/05.	Headaches of lymphatic type six days out of week for past three or four years. Dyspepsia but no constipation; great languor; chilblains for one week. 15 grains of calcium lactate, t.d.s.	Coagulation time of blood, 2 mins.	Two weeks after treatment was begun: Coagulation time of blood, 75 secs.	Two weeks after treatment: No headaches for preceding week. Chilblains much less painful and swelling less. Three weeks after treatment: No headaches; chilblains practically gone. (Also vide Table II.)	—
10	Female, aged 24. 10/4/05.	Headaches of lymphatic type almost every day for at least eight years. Great languor, especially in morning; chilblains every winter. 20 grains of calcium chloride for one week and 20 grains of calcium lactate, t.d.s., for two months with occasional intervals of a week.	Coagulation time of blood, 1 min. 45 secs. Minimum concentration of ammonium oxalate to obtain decalcification, 1 in 2000.	Three weeks after treatment was begun: Coagulation time of blood, 1 min. 35 secs. Minimum concentration of ammonium oxalate to obtain decalcification, 1 in 1350.	Ten days after beginning treatment: Headaches almost gone and chilblains less irritating. Three weeks after treatment: Headaches gone and chilblains only show as painless erythema. Seven months after treatment (has had no calcium for about five months): Patient well; never been so free from headaches for eight years.	—
11	Female, aged 22. 27/10/05.	Headaches of lymphatic type almost every day for past year, so severe that the patient used to "bang her head about." Chilblains for past five years; dyspnœa; cough; constipation; languor. 15 grains of calcium lactate, t.d.s.	Coagulation time of blood, 2 mins.	Ten days after treatment: Coagulation time of blood, 1 min. 7 secs.	After six days' treatment: Headaches gone and also chilblains. Both remained absent for almost two weeks when other treatment was begun. (Vide Table II.).	—
12	Female, aged 26. 27/10/05.	Headaches of lymphatic type one and a half years but almost continuous for six months and at times neuralgic. Subject to urticaria; had chilblains and puffiness of eyes; great languor. 15 grains of calcium lactate, t.d.s.	Coagulation time of blood, 1 min. 30 secs.	One week after treatment: Coagulation time of blood, 30 secs.	After three days' treatment: Headaches and chilblains less; after five days both gone and remained absent for almost two weeks, when other treatment was begun. (Vide Table II.)	—
13	Female, aged 30. 3/11/05.	Headaches of lymphatic type for past 13 years which were worse in afternoon and always unilateral. Every day for past six months puffiness of eyes; chilblains; languor. 15 grains of calcium lactate, t.d.s.	Coagulation time of blood, 2 mins. 30 secs.	Ten days after treatment: Coagulation time of blood, 1 min. 20 secs.	After 24 hours headache was less and during first ten days had headache only once. Chilblains much less irritating. Eyes less puffy. General condition much improved. After two weeks' treatment: Headaches and chilblains gone. After two months' treatment: Headaches only very occasionally; no chilblains (first winter for many years).	This patient had tried many different treatments during preceding ten years without relief. Return of headache during first ten days occurred at night after excessive reading. Eyes were myopic and astigmatic (? "eye strain".)
14	Male, aged 31. 22/10/05.	Wakened with "splitting" headache, having bade "good-bye" to a friend preceding night (alcohol in excess). Headache no better at 3 P.M., when half a drachm of calcium lactate was given.	Coagulation time of blood (2.45 P.M.): 2 mins. 15 secs.	At 5 P.M.: Coagulation time of blood, 1 min. 15 secs. At 9.30 P.M.: Coagulation time of blood, 1 min. 20 secs.	At 4 P.M. the headache had almost gone and at 8 P.M. there was no headache whatever.	Professor Wright has shown that alcohol diminishes blood coagulability to a marked degree.§ May we not have here an explanation of the headache following excessive libation?

* The method used was that described by Wright and Paramore in THE LANCET, Oct. 14th, 1905, p. 1096.
† The method used was that described by Wright and Knapp in the Transactions of the Royal Medical and Chirurgical Society, vol. lxxxvi.
‡ Lieutenant Leonard Rogers (Scientific Memoirs of the Medical Officers of the Army of India, Part IX., 1896) showed that the per-salts of iron increased the coagulability of the blood. The writer has also determined this fact in a series of investigations. § Loc. cit.

coagulability of the blood) was followed by the exaltation of the coagulability of the blood. Concomitantly with, or closely following upon, this alteration in the blood the headaches were almost invariably relieved, even although the headaches were associated with but five cases showing such overt symptoms as chilblains or urticaria. Moreover, as is shown in Table II., the headaches and the chilblains (which were both present in each of the three cases quoted) disappeared on the administration of a salt of calcium, with the consequent exaltation of the coagulability of the blood. They reappeared on decalcification of the blood with citrate of potassium, with the consequent diminution of the coagulability of the blood and both the headaches and the chilblains in all three cases a second time disappeared after a second time administering a salt of calcium. The coagulability of the blood was again considerably increased. In view of these facts, therefore, I feel justified in believing that the lymphatic type of headache is but another manifestation of the morbid process above described as "serous hæmorrhage."

In Table I. it will be seen that pain after food occurred in 23 out of 48 cases of chronic lymphatic headache. This frequent association can, I believe, be reasonably ascribed to the same pathological process which I have endeavoured to show underlies the lymphatic headache—namely, serous hæmorrhage. The following explanation is offered. If the walls of the stomach became the seat of serous hæmorrhage due to the lowered coagulability of the blood, then the sudden accession of a considerable quantity of blood, consequent upon the act of digestion, would cause a rapid increase of pressure upon the nerves of the stomach wall which would result either in the gastric pain or only a sense of fulness. The following facts support this view: 1. Gastric crises are common in urticaria. 2. The occurrence of gastric crises in Werlhoff's disease. 3. The pain after food usually disappears when control of serous hæmorrhage has been established by the exhibition of a salt of calcium.

TREATMENT.

The investigation of headaches of the lymphatic type

elicited the fact of a deficient coagulability of the blood. It then occurred to me that the adoption of a form of treatment capable of exalting this deficient coagulability would control the symptoms. To this end I administered one of the salts of calcium. In almost all cases complete relief has followed this form of treatment not only of the headache but of many of the associated symptoms. It is, however, important to estimate the coagulability of the blood before beginning treatment because, as a general rule (to which there is an occasional exception), unless there be a deficient coagulability of the blood, no benefit from the administration of a salt of calcium need be expected. The following embodies the principles of the treatment:—

A. *Medicinal.*—1. The administration of one of the salts of calcium. Of the two which have been used the lactate of calcium is to be preferred to the chloride, because the latter is unpalatable, often nauseating, and occasionally not absorbed, whilst the lactate is much less open to any of these objections. The following has proved a satisfactory mixture: 15 grains of lactate of calcium, half a minim of tincture of capsicum, and one ounce of chloroform water; to be taken three times a day before meals. If more convenient one may prescribe as a powder 15 grains of lactate of calcium, which should be dissolved in one-third of a tumbler of water and taken before meals. If the lactate of calcium be not available, the chloride may be administered: 15 grains of chloride of calcium and one ounce of camphor water; to be taken three times a day before meals (if nauseating it may be given after meals). (Calcium lactate may be combined with the bitters, with iron, with strychnine, &c., but may not be combined with the alkalies or their carbonates.) 2. Regulation of the bowels. Constipation is a common accompaniment and must be controlled. Mild aperients, such as salines or liquid extract of cascara, are usually sufficient.

B. Dietetic.—The ingestion of one or two pints of milk a day is advisable though not essential. The patient should be counselled against eating oysters, crabs, strawberries, &c., which seem to contain certain lymphagogic agents. It is best to avoid malt liquors and wines. The medicinal treatment of the constipation should be supplemented by a suitable dietary. Such a regimen in chronic cases is almost invariably successful.

In a number of cases, usually of the less severe type, considerable relief is felt in from a half to one and a half hours after the exhibition of the calcium salts. In others the relief comes during the first 24 hours of treatment, whilst in almost all the headaches disappear after the fourth day. Very occasionally a severe chronic headache of long duration is but little affected in less than ten days' treatment. It is advisable to continue the administration of one of the salts of calcium for a period of three weeks in the milder types of the lymphatic headache and for six weeks in the severer types.[3] For the relief of the occasional lymphatic headache, which is very commonly met with, the exhibition of half a drachm of calcium lactate is usually successful in from half an hour to one hour.

It is convenient to set forth in tabular form certain clinical data and the results of the various blood examinations in 14 cases of lymphatic headache. (See Table III.) In addition to the 14 cases tabulated I have treated 34 more, making 48 in all. The following is a synopsis of the 48 cases:—

1. All definitely conformed to the lymphatic type of headache above described, and of these, 40 obtained complete relief and eight considerable, though not complete, relief.

2. In four cases neuralgia occurred, two facial and two of the nerves of the lower extremities. In all relief was coincident with the disappearance of the headache and the œdema.

3. In 23 cases there was pain after food. Of these, 16 found complete and seven partial relief. Further, the rapidity with which this result was obtained appears to me to be a strong evidence in favour of the above-mentioned theory as to the causation of the gastric pain.

4. In 22 cases dyspnœa occurred. 12 were completely relieved, nine partially, and one not at all. Shortness of breath has proved the most intractable of all symptoms.

5. Œdema of the eyes or of the extremities occurred in 21 cases, and of these 17 were completely and quickly relieved. Puffiness of the eyes is readily controlled but œdema of the feet usually requires several weeks' treatment.

6. Chilblains occurred in six cases and urticaria in two. All eight cases obtained complete relief of pain and swelling. A glossy erythema sometimes persisted for a considerable period after the chilblain had disappeared but it caused no discomfort whatever.

7. In the majority of cases some anæmia was apparent, though usually not pronounced. In about 25 per cent. of the above cases there was slight or severe chlorosis and of the latter there were several in whom the anæmia was greatly lessened or controlled during treatment *vide* Case 3, Table III.). The evidence, however, is insufficient to speak positively on this point.

8. Languor was practically always an accompaniment of this condition and one of the most astonishing results was the almost invariable improvement in mental and physical tone which followed the control of the morbid process conducive to serous hæmorrhage.

9. Relapses occurred in eight cases, as a rule apparently due to the return to a careless mode of living or to dietetic indiscretion. The symptoms in all the cases were a second time easily controlled by treatment.

CONCLUSION.

That we have in the salts of calcium a therapeutically rational and effectual means of relieving headaches which are due to a deficient coagulability of the blood.

Possible further applications.—1. In the treatment of those neuralgias accompanied by a deficient coagulability of the blood. Four cases have been treated with success. 2. In the treatment of migraine. In two typical cases the paroxysms have practically ceased during treatment with calcium lactate.

Note on the relief of headaches and the œdema of chronic nephritis.—Six cases of chronic nephritis have been treated according to the principles enunciated above. In five the headaches and the œdema were greatly lessened by the administration of a salt of calcium. One case obtained only partial relief. The details of this investigation will appear in another communication.

I wish to acknowledge my indebtedness to the honorary and resident staff of the City of London Hospital for Diseases of the Chest for allowing me to investigate cases which were under their care at the hospital.

[3] No ill effects have been observed as a result of the immediate administration by mouth of a single large dose of a salt of calcium or as a result of the daily administration of small doses over a long period.

REMARKS UPON THE SURGERY OF THE COMMON BILE-DUCT.[1]

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THE subject that I have chosen for the address which, by your courtesy, I have the honour to deliver to-night is "The Surgery of the Common Bile-Duct." Experience in this branch of surgery has been rapidly accumulating and a brief survey of the work which has already been done is not undesirable. An occasion of this kind affords a definite stimulus to a scrutiny of one's own work and gives an incentive and an opportunity both for comparison with that of others and for a review of the whole subject.

The common bile-duct is rather more than three inches in length; it extends from the junction of the cystic and common hepatic ducts downwards and to the right in the free edge of the gastro-hepatic omentum to its termination in the second portion of the duodenum where it bears a relationship to the opening of the canal of Wirsung, the duct of the pancreas. As a rule, three portions of the duct are described: (1) the supra-duodenal portion; (2) the retro-duodenal portion, or the pancreatic portion; and (3) the trans-duodenal portion. 1. The supra-duodenal portion varies from one and a quarter to one and a half inches in length. It lies in the free edge of the gastro-hepatic omentum, having the hepatic artery to the left and the portal vein behind. It is the widest part of

[1] An address delivered before the Nottingham Medico-Chirurgical Society on Oct. 18th, 1905.

the duct, which in its whole course is funnel-shaped, gradually narrowing from its origin to its termination. The point of chief surgical importance is the fact that along this portion of the duct three or four lymphatic glands lie. These in their enlargement may come to resemble stones; indeed, they cannot always be distinguished from stones by touch alone. 2. The retro-duodenal portion is from an inch to one and a quarter inches in length. It is in close relationship with the pancreas, lying either in a groove in the gland or actually traversing its substance. Helly in 40 cases found that the duct lay in a groove in 15 cases and was embedded in the gland in 25. Bunger in 58 cases found that in 55 the duct was embedded, in three only was it partially uncovered by the pancreas. 3. The trans-duodenal portion, about from half to three-quarters of an inch in length, consists of that portion of the duct which lies within the wall of the duodenum. In order to open the lumen of this portion of the duct from within the duodenum the wall of the bowel has therefore to be cut *into* but not *through*. The common duct at its termination in the duodenum is associated with the termination of the duct of Wirsung in a manner that is liable to variation. The two ducts are surrounded by a circular band of muscular fibres described as the "sphincter of Oddi." Letulle and Nattan-Larrier described four varieties in the mode of ending of the common bile-duct and of the pancreatic duct in the duodenum. First type: Two cases in 21. There is a complete absence of any projection or raising up of the mucosa. A longitudinal furrow from two to three millimetres long, with prominent lips, surrounding a circular or oval opening, is seen. This opening is the termination of the common duct. The canal of Wirsung opens into the common duct at a variable distance from the intestine. Second type: Six cases in 21; it forms the "perfect model of the ampulla of Vater." At the opening into the intestine there is a slight projection on the surface of the mucosa from seven to 12 millimetres in length. The opening is circular or elongated vertically and at its largest measures three millimetres in length. The two ducts terminate in a cavity more or less circular the measurements of which are in a vertical direction from four to six millimetres and in the transverse from six to seven millimetres. Before opening into the ampulla both ducts are narrowed for a few millimetres. As a rule the common duct lies near to the duodenum in this type and can be felt as a vertical ridge beneath the mucosa. Third type: Eight cases in 21. This form is characterised by the presence of a very slight elevation on the surface of the duodenum, by a shallow fossa or gutter situated immediately below the point of opening of the ducts, and by the non-confluence of the two ducts before their termination. There is, therefore, no ampulla. The extent of the gutter or trough which surrounds the lower parts of the ducts at their terminations varies very greatly in different cases. The two ducts lie together at their termination like the two barrels of a gun; the pancreatic duct may be below and behind or below and in front of the common duct. Fourth type: four cases in 21. In this form there is a prominent papillary projection on the summit of which the two ducts open side by side, separated by a vertical partition; there is no ampulla. In some cases the opening of the canal of Wirsung may be crescent-shaped, the opening of the common duct lying in the hollow of the crescent. It will be seen that from the surgical point of view it is a matter of the greatest importance to recognise these varieties of form; the obstruction of the lower part of the duct in the first variety would involve an implication of the pancreas; the obstruction of the orifice of the ampulla in the second variety would convert the common duct and the canal of Wirsung into a single channel, whereas in the third and fourth forms the ducts are strictly separate. The conditions in which surgical interference with the common duct is called for are: (1) rupture of the duct; (2) calculus and in inflammatory conditions caused by other agents; (3) stricture; (4) new growth; and (5) pressure upon the duct from without.

1.—RUPTURE OF THE COMMON BILE-DUCT.

Rupture of the common bile-duct may be the result of *injury* or of *disease*.

(*a*) *Traumatic rupture* of the common duct is always subcutaneous; so far as I am aware no case has been recorded as the result of a penetrating wound. Traumatic subcutaneous rupture probably occurs more frequently than the recorded cases would lead one to believe. The number of the cases in which a laceration or rupture of the duct has been discovered either during an operation or upon post-mortem examination is small, but cases similar in all the details of their clinical history to these have recovered after the abdomen has been aspirated and large quantities of bile or deeply bile-stained fluid have been evacuated. A rupture of the duct in these instances, though, of course, not certain, was at the least extremely probable. The bile-duct may be torn at any part of its course and the rent may be small or the duct may be completely severed. The laceration, when small in size, may involve the anterior or the posterior wall; a large tear or a complete division of the duct is the condition generally found. As soon as the duct is torn bile escapes into the peritoneal cavity and before long sets up a responsive peritonitis. The result is that in the earliest days a very copious deposit of lymph is found in all the parts in the neighbourhood of the duct. The under surface of the liver is plastered with thick layers of lymph, the intestines, the duodenum, and the stomach especially, are all coated over with lymph, which can be peeled off in thick strips. The bile escaping from the duct may run free in the peritoneal cavity or its passage may be checked by barriers of lymph; an encysted swelling then results. It is interesting to note that this abundant deposit of lymph occurs only, or at least chiefly, after a traumatic rupture of the common duct. When the hepatic duct or the gall-bladder is torn lymph is formed in most cases but neither so rapidly nor so freely as when the common duct is involved. The reason for this may be found in the different condition of the bile as regards the presence of micro-organisms. Gilbert and Lippmann[2] investigated the condition, so far as concerned micro-organisms, of the bile in the extra-hepatic ducts in animals. The middle and lower thirds of the common duct were found to contain both aerobic (including the bacillus coli communis) and anaerobic organisms but, in the cystic duct and gall-bladder, only anaerobic organisms were found. The numbers of these organisms diminished gradually towards the upper part of the hepatic duct. It seemed clear that the infection of the bile passages proceeded upwards from the intestine. Bile poured out therefore from either the hepatic duct or the gall-bladder would prove less irritating to the peritoneum than that escaping from the common duct and would call forth a less vigorous response from it. This abundant deposit of lymph prevents the resorption of bile by the peritoneum. But for this the bile would be rapidly absorbed and give rise to symptoms of toxæmia. In a series of experiments upon dogs Erhardt ligatured the common duct immediately above the duodenum and, from the ligature, slit the duct upwards to the hepatic duct. The animals died within from two to six days from deep jaundice and profound symptoms of toxæmia. No evidences of peritonitis were present. The bile absorbed rapidly by the peritoneum caused death from poisoning, the harmful constituents of the bile being, according to Biedl and Kraus, the bile-acid salts. In Erhardt's experiments it was found that if at the time of the operation a culture of the bacillus coli was introduced into the peritoneum a plastic peritonitis resulted. Bile was therefore absorbed far more slowly, jaundice was slight and slow in appearing, and the animals survived for 14 days or longer. It would appear, therefore, that in rupture of any part of the bile passages two dangers are to be apprehended—one from the absorption of the bile the acid salts of which are poisonous, the other from infection by organisms escaping through the distal torn end and coming from the duodenum. These organisms, in so far as they excite a fibrinous peritonitis, are helpful rather than harmful. It is interesting to note that suppurative peritonitis, either general or local, has not been observed in any case so far recorded. Infection with organisms (probably the bacillus coli) is therefore slight. The deposit of lymph upon and around the common duct may cause the complete sealing up of the rent, so that when an operation is performed no further escape of bile is perceived and the source of that which has already escaped may be difficult to discover. In Battle's case, for example, the laceration was hard to find post mortem on account of this coating of the parts with lymph. In one case of rupture of some part of the bile passages Routier opened the abdomen, drained away all the deeply bile-stained fluid, and found the under surface of the liver and gall-bladder and all the region of the ducts firmly surrounded by thick deposits of lymph. No bile could be seen to issue from any point. After

[2] Mémoires de la Société de Biologie, vol. xxxi.

thoroughly drying the peritoneum with swabs Routier closed the abdomen completely and the child made a perfect recovery. The detailed history in this case shows unquestionably that a rupture of the bile passages had occurred and affords a proof seemingly conclusive that the secure healing of a duct may be accomplished through the agency of the lymph. A case is recorded by Thompson of Edinburgh in his work on "Diseases on the Liver" in which the bile passages at some part would seem to have been ruptured. After the usual course of symptoms the abdomen was tapped and 16 pints of bile were withdrawn. At the post-mortem examination no lesion of the bile passages or of the liver was discoverable. There was a new "false membrane" covering the ducts and lymph was deposited everywhere.

Symptoms.—The symptoms and signs caused by a rupture of the common bile-duct are jaundice, the absence of bile in the stools, the gradual distension of the abdomen by fluid, and wasting. In two cases out of the total number of 12 recorded death occurred from shock or collapse when no symptoms of any kind other than these had had time to develop. The patients were almost all young children, only four being over 20 years of age and five being under six years of age. The accident was generally due to the patient being run over, or kicked, or struck in the abdomen. Jaundice is a variable symptom; it may come on within the first few days or its appearance may be delayed for a fortnight. In at least one case, that of Hahn, it was never present. In Porter's case and in Stierlin's jaundice disappeared after the abdomen had been tapped and a large quantity of bile evacuated. The jaundice is never profound; in most of the records it is stated that the jaundice was "slight" or that the skin was "lemon coloured." The colouring of the skin is due to the absorption of bile by the peritoneum. As soon as lymph is poured out the absorption ceases or is reduced considerably, and the jaundice then remains stationary or fades slowly away.

Bile is absent from the fæces in all cases of rupture of the common duct. All the bile passing down the duct escapes at the point of rupture. Though these statements are accurate in so far as they concern the cases in which the presence of a laceration of the duct has been verified by operation or by post-mortem examination, it cannot be open to doubt that in some cases a rent in the duct has been closed by the deposit of lymph and the patency of the canal restored. The case of Routier, quoted above, is possibly one exemplary instance of this. In the records of the 12 verified cases it is noticed that the stools were "clay-coloured," "pale grey," or "acholic" in nine, in one no record was made, and in two death occurred from shock too early to admit of any observations upon this point. During the time that jaundice is present there may be bile in the urine, though this is not necessarily the case. The bile, though unable to reach the intestine, does not necessarily become absorbed by the peritoneum to an extent sufficient to cause either jaundice or staining of the urine.

The gradual distension of the abdomen by fluid is a constant feature in all cases. In 10 of the 12 cases (two patients dying from shock) a slow accumulation of fluid in the abdomen was observed. The fluid when aspirated was found always to be bile or fluid deeply bile-stained. The bile escaping into the peritoneum may flow over the whole cavity and fill every part of it, as does the fluid in a case of ascites. Or if the sero fibrinous peritonitis be rapidly set up barriers of lymph may confine the fluid to a limited area of the abdomen, the rest being free. A local swelling, generally in the right hypochondrium, then results. In one case (Drysdale's) the fluid filled the right side of the abdomen and the greater part of the pelvis and the wall of lymph was so firm and so complete that the recorder speaks of a "cyst," into which the common duct opened at the point of rupture.

A rapid loss of flesh is noted as having occurred in most of the cases and in some the emaciation is spoken of as being "extreme." The temperature is generally normal, increasingly worse as the abdomen enlarges.

So far as the differential diagnosis is concerned, it would seem that an accurate discrimination between rupture of the hepatic or common ducts and rupture of the gall-bladder should be possible. When either of these ducts is torn the whole of the bile escapes into the peritoneal cavity and the stools are colourless; if the gall-bladder be torn bile can still flow unhindered along the ducts into the intestine and the colour of the stools is normal or, owing to the escape of a part of the bile through the gall-bladder, is only slightly paler than is natural.

Treatment.—In all the cases so far recorded no treatment has been adopted in the days immediately following the accident. It is only when the abdomen has become greatly distended by fluid that aspiration or incision has been contemplated. In one case, that recorded by Rose, no less a period than nine months elapsed between the receipt of the injury and the operation. If the circumstances were such that a diagnosis could be made early and operation undertaken promptly the results would be more satisfactory than they are, but the injury received is rarely such as to do damage to other parts than the common duct, the shock and collapse pass off rapidly, and the general and local conditions improve so decidedly that no question of surgical treatment arises. It is only when jaundice, fæcal acholia, and, above all, the general distension of the abdomen, are recognised that the diagnosis is assured. If early operation could be performed then end-to-end suture, or partial suture with drainage, as in choledochotomy, might be performed. In some of the cases, Porter's and Stierlin's, the distal end of the common duct could not be found even after the most careful search; in Stierlin's case, indeed, the distal end could not be discovered even at the post mortem examination. In such circumstances ligature of the proximal end of the duct and cholecystenterostomy might be performed, or the proximal end of the duct might be implanted into the duodenum. In those cases in which the conditions are so serious that the simplest and speediest operation is alone permissible the bile must be emptied out as thoroughly as possible and a large drainage-tube be introduced. Courvoisier suggested that when the common duct was completely ruptured tubes might be passed into each torn end and left hanging out from the abdominal incision. When adhesions around the tubes had shut them off from the general peritoneal cavity the tubes could be removed and the bile might then find its way from the upper to the lower opening and the biliary fistula gradually close.

(*b*) *Pathological rupture of the common bile-duct* occurs generally as the result of the presence of a foreign body. Inflammation, softening and distension of the walls, and finally ulceration are set up and the duct at last gives way. The rupture of the duct may occur into the general peritoneal cavity; or into a localised mass of protective adhesions, an abscess then resulting; or the outer surface of the duct before rupture occurs may have become strongly adherent to a neighbouring viscus into which the perforation takes place, with the formation of a fistula.

Including the cases collected by Courvoisier there are 11 instances of perforation of the common bile-duct into the general peritoneal cavity; in six cases stones were present, in three ascarides, and in two no foreign body could be found. In all the clinical course was rapid and death occurred from acute peritonitis; in one case there was profuse hæmorrhage, possibly from ulceration into the portal vein. An interesting example of rupture of the common duct into the peritoneal cavity, causing death from peritonitis, is recorded by Janeway.[3] In some cases the perforation of the duct is subacute, an abscess being slowly developed. The spreading of this gives rise occasionally to a subphrenic abscess, or the local abscess may rupture and cause a diffuse septic peritonitis, or the abscess may open secondarily into the colon[4] or upon the abdominal wall, an external biliary fistula being formed.[5]

When the common duct has become adherent to a hollow viscus or the perforation has occurred from the third portion of the duct a fistula results. I have operated upon fistulæ connecting the common duct and the gall-bladder and the common duct and the duodenum. A choledocho-duodenal fistula may connect the second or the third part of the duct with the bowel. The "wide-mouthed opening" of the common duct into the duodenum seen in cases of old-standing obstruction of the duct by a calculus is in reality the opening of a fistula through which the stone has ulcerated into the bowel.

2.—STONE IN THE COMMON DUCT.

A stone lodged in the common duct causes an obstruction which is either *complete* or *incomplete*; complete when the stone has just entered the duct which it fits tightly preventing any drop of bile from passing it, incomplete when the stone has been in the duct for some weeks or months when secondary changes in the duct such as softening and

[3] New York Medical Journal, 1877, p. 531.
[4] Bristowe: Transactions of the Pathological Society of London, London, 1858, vol. ix., p. 285.
[5] Morris: New York Medical Record, Jan. 1st, 1887, p. 22.

dilatation have occurred and when, therefore, the stone no longer fits the duct tightly but lies loosely within it, permitting the escape of bile by its side. In other words, an acute obstruction of the duct is complete and a chronic obstruction is incomplete. In the majority of cases of calculous occlusion of the duct there are more stones than one. Courvoisier in 149 cases found that there was a single calculus in 95, that there were two calculi in 36, and that there were 12 stones or more in 18 cases. The experience of most surgeons, however, is different from this. When choledochotomy is performed a solitary stone is found in only about 1 case in 4. Courvoisier in 123 cases found that the position of the stone or stones blocking the duct was as follows: in 17 cases at the commencement of the duct; in 19 cases in the middle of the duct; in 20 cases near the duodenum (retro-duodenal portion); in 41 cases at the ampulla; and in 26 cases the whole length of the duct was blocked. Vautrin in 47 cases found that calculi were present in the part of the common duct above the duodenum in 27 cases; in the duct in contact with the duodenum in 18 cases; and in the ampulla in two cases. In some rare cases the whole of the common duct, from end to end, the hepatic duct, and all the intrahepatic ducts may be filled with stones very tightly packed together or with a sort of thick tenacious mucus containing gall-stones innumerable.

Acute occlusion of the common duct from within is rare, except as a transient condition. When a gall-stone escapes into the common duct from the cystic duct it passes at once downwards into the funnel-shaped duct as far as it can before it is arrested. The larger a stone is the sooner will progress be checked; the smaller a stone the further will it pass. When a part of the duct is reached the lumen of which is so narrow that the stone cannot pass it is arrested. It then fills the duct and blocks its lumen absolutely, allowing no drop of bile to escape by its side. The common duct is then as securely blocked as if tied with a string. But this condition of things does not long endure. Slowly but surely certain changes occur, the result of inflammation in the duct, softening of its walls, and the secretion-pressure of the bile, which have the effect of giving rise to a dilatation of the duct, so that a stone which at first fitted tightly now fits loosely. The stone forms, as Fenger first pointed out, a sort of "ball-valve" in the duct. A complete occlusion of the duct is, therefore, in cases of stones, only an acute temporary condition. As the result of inevitable changes in the duct the obstruction becomes only a partial, incomplete one. In cases of stricture, simple or malignant, or of compression of the duct from without by enlarged glands or by the head of the pancreas involved in a carcinomatous growth, the complete obstruction of the duct may be permanent. A stricture of the duct may cause its absolute obliteration for a space of an inch or more; in such a state the occlusion is complete and permanent. In all cases where the block in the duct is complete the bile pent up behind the obstruction becomes gradually absorbed and the hepatic ducts and all the biliary ducts behind the occlusion become filled with clear sticky mucus. The ducts are everywhere dilated.

The chief, and often the only, symptom of complete closure of the common duct is jaundice, deep and unchanging. In the earliest stages when the obstruction is developing pain may be present but it is rarely or never severe and it disappears speedily. Jaundice in cases of obstruction by stone appears rapidly and attains its maximum within a few days; in cases of obstruction of the duct due to stricture, simple or malignant, or to compression by growth from without, the jaundice comes insidiously, deepens little by little, never lessens, but progresses always to its maximum intensity without any periods of remission. It is in these cases of complete obstruction of the duct that the diagnosis is difficult and at times even impossible. If time elapses without any onset of rigors or of variation in the jaundice, the likelihood of a stone being present is small; the obstruction then is probably due to malignant disease in or around the duct.

The condition of the gall-bladder in these cases affords a great help in achieving an accurate diagnosis. This point was first fully investigated by Courvoisier. He found in 187 cases of obstruction of the common duct that in 100 the obstruction was due to causes other than stone, and in 87 to the impaction of a stone. Of the 100 cases in which the obstruction was due to causes other than stone, in 92 there was dilatation of the gall-bladder and in eight cases there was a normal gall-bladder or an atrophy of the gall-bladder. Of 87 cases in which the obstruction was due to stone, in 70 cases the gall-bladder was atrophied and in 17 cases the gall-bladder was dilated. All these cases were collected from the literature. Of the cases that came to operation and were recorded by Courvoisier, 35 in number, in 18 the obstruction was due to causes other than stone, and in 16 of these there was dilatation of the gall-bladder, in 17 the obstruction was due to stone, and in 13 of these the gall-bladder was contracted. These observations of Courvoisier were formulated by him in the following statement, which is now generally referred to as "Courvoisier's Law." "*In cases of chronic jaundice due to blocking of the common duct, a contraction of the gall-bladder signifies that the obstruction is due to stone; a dilatation of the gall-bladder, that the obstruction is due to causes other than stone.*" The validity of this law has been closely investigated and its truth has been affirmed by almost every writer. Ecklin in 172 cases of common duct obstruction due to calculus found that 28, or 16 per cent., had dilatation of the gall-bladder and 144, or 84 per cent., had contraction of the gall-bladder. In 139 cases of obstruction due to other causes 121, or 87 per cent., had dilatation of the gall-bladder.

A further examination of the question has been made by Dr. A. Cabot of Boston who collected the records of the Massachusetts Hospital. There were 86 cases of obstruction of the common duct. Of these 57 were due to obstruction by stone; in 47 the gall-bladder was atrophied, in eight it was normal, and in two enlarged. 29 cases were due to causes other than stone; in 27 the gall-bladder was distended, in one the gall-bladder was empty, and in one contracted around three stones. Only four cases therefore in this series did not fall in with Courvoisier's law. Cabot writes: "With the exception of these four cases, which constitute only 5 per cent. of the total number examined, every record of the Massachusetts Hospital series in which definite statements are to be found concerning the points at issue goes to confirm Courvoisier's law." The explanation given by Courvoisier of the occurrence of sclerosis of the gall-bladder in cases of stone was that the presence of calculi in the gall-bladder and their passage or attempted passage down the ducts had caused irritation and inflammation in and around the bile passage. Cholecystitis and peritonitis were the result and had determined the cicatricial cramping and compression of the gall-bladder.

If persistent and unvarying jaundice is associated with enlargement of the gall-bladder, and inflammatory troubles, rigors, sweatings, elevation of temperature, and rapidity of pulse are also in evidence, then it is probable that there is a stone in the common duct and that cholangitis and cholecystitis are secondary to it, for infection of the bile passages, though not impossible in cases of malignant disease, occurs far less frequently than when the obstruction is calculous. The presence of enlargement of the liver, especially of an irregular character, or of ascites will support a diagnosis of carcinoma.

Incomplete occlusion of the common duct; chronic calculous obstruction.—In the great majority of cases of obstruction of the common duct by stone the block is only a partial and intermittent one. At the first the occlusion, as I have pointed out, is complete, but after a time the stone is loosened and comes to act as a ball-valve. It then floats in the duct, upwards and downwards. At times it is pressed onwards, in part, perhaps, by the force of the bile behind it, in part also by the muscular contraction of the walls of the duct. As it passes further downwards it comes to a part of the duct whose lumen is not large enough to permit the further descent of the calculus. The stone is arrested there, gripped firmly, and for a time the block in the duct again becomes complete. Soon, however, the stone is floated upwards into the wider duct and bile escapes past it into the lower part of the duct to flow into the duodenum. The occlusion is then incomplete and remains so until the stone again attempts to pass downwards and is again arrested. The description given by Fenger of the "ball-valve" action of the stone is thus seen to be completely justified, for at times the passage of bile is absolutely stopped by the stone and at other times the bile can flow past the stone unhindered. The fact that the stone lies freely moveable in a dilated duct is always realised by the surgeon in the operation of choledochotomy, for it is difficult to fix the stone owing to the ease with which it slips away from the grasp of the fingers.

The symptoms of stone in the common duct are sometimes trivial and inconspicuous and, indeed, are at times entirely

absent. I have twice found during the performance of cholecystotomy that stones were present in the common duct when symptoms were wholly lacking. If the stone is small or fits loosely in the duct there may be neither obstruction nor cholangitis and the stone, therefore, may never attract clinical recognition. The symptoms are due in part to the intermittent mechanical impediment in the duct and in part to the cholangitis which the stones excite.

Pain is present only at times. It comes, as a rule, in attacks which vary much in severity. The pain is dull and aching with, especially in the beginning of the attack, spasmodic outbursts. As a rule the pain is accompanied by a rigor; the temperature runs rapidly up to 102°, 103°, or 104° F; there are shivering and collapse, followed by sweating, and in the succeeding hours it is noticed that the jaundice, which is persistent, has deepened much in tinge. In the intervals between such attacks as these the patient suffers little or not at all. There is neither pain nor tenderness over the liver and the jaundice grows gradually paler. Jaundice, which was described by Courvoisier as the "cardinal symptom" of common duct obstruction, never disappears, though in very old-standing cases the patients may say that they are free from jaundice when there is still an obvious tinge of yellow in the conjunctivæ and in the skin. In one patient, a woman, who had suffered from these ague-like paroxysms for nine years, the skin was said to be "sallow" normally and the suggestion that she was jaundiced to a slight degree met with no confirmation. It was only after the removal of one large and several smaller stones from the common duct that the patient became convinced, as her skin gradually whitened, that the sallowness was due to jaundice, from which she had never been free through all the nine years. Many patients noticed that the jaundice varies during the course of the day, being lighter in the morning and becoming deeper towards night.

The temperature angle in a case of common duct obstruction by a stone is quite characteristic. With each attack of pain there is a rapid elevation of temperature when the rigor occurs. As the rigor passes off the temperature remains until the next seizure of pain occurs, when the temperature mounts to 103° or 104° to fall again at once. This rapid elevation and sudden fall of the temperature in each "attack" when the temperature is normal in the intervals causes the chart of a case of this kind to be perfectly characteristic. I suggested for it some time ago a name which seems quite appropriate and which has been since widely adopted—the name "steeple chart."

Courvoisier, in his analysis of recorded cases, found fever in 25 per cent. of the cases of occlusion from stone and in only 10 per cent. of the cases of occlusion due to other causes. The former estimate seems to me to be considerably below the truth. If a case of common-duct obstruction be observed for a period of two or three weeks there will, with few exceptions, be found some abrupt elevation of temperature coinciding with the pain, and attacks of shivering and subsequent sweating, not perhaps of sufficient gravity to be considered as rigors, will occur. During an attack, and for some hours after, there may be a slight enlargement of the liver and the liver everywhere is tender to the touch. In chronic obstruction of the common duct the liver is always enlarged in the earlier stages; its increase in size may indeed be considerable. The liver may reach to the umbilicus or even descend beyond it. In each attack, when a rigor and an elevation of temperature followed by a deepening of the jaundice occur, an increase in the size of the liver may be observed and the organ on handling is found to be tender. In the latter stages the liver decreases slowly in size and at the last may be even smaller than the normal. According to Mongourt the shrinkage of the liver is the most important sign of the degeneration of the hepatic cells. The condition of the stools and of the urine varies from time to time. As a rule, some bile passes always into the intestine so that the motions are a deep buff in colour. After an attack there is obvious evidence both in the fæces and in the urine that less bile is getting access to the duodenum. The variations are, however, much more readily recognised in the stools than in the urine. The persistent presence of urobilin in the urine is held by many observers to indicate the onset and the continuance of a process damaging to the hepatic cells. In many cases an enlargement of the spleen is noticed, more especially after an attack and for some days subsequently. The gastric disturbances noticed in cases of gall-stone impaction vary within very wide limits. There may be nothing more than a sense of uneasiness in the epigastrium and distension after food for which there is often a distaste, or, on the other hand, there may be severe vomiting during, and subsequent to, the attack and a feeling of profound nausea. Itching of the skin is almost constant as in all forms of jaundice and a crop of boils may at times break out.

One of the most marked and characteristic symptoms of obstruction of the common duct by stone is loss of weight. A loss of two, three, or four stones is not infrequently recorded. The loss is both rapid and considerable and after a successful operation is very speedily regained. This loss of weight was ascribed by Fenger to "intermittent, frequent, ptomaine intoxication—that is, bile absorption—as well as to disturbed digestion." It is most important that this symptom should be recognised as a frequent and striking manifestation of stone in the common duct, for the haggard, wasted, often emaciated, appearance of the patient may strongly suggest a diagnosis of malignant disease. It is more than likely that some measure of responsibility for this symptom may rest with the pancreas, the secretion of which may be profoundly modified both in quality and in quantity by an extension of the inflammation from the common duct to the canal of Wirsung into the substance of the pancreas. Chronic pancreatitis is by no means an uncommon event in long-standing obstruction of the common duct, wherever the obstruction may be.

The characteristic signs and symptoms of stone in the common duct, therefore, are:—

Jaundice.—The jaundice is persistent but variable. It never wholly disappears, though in the interval between the attacks of pain may be so slight as to be almost unnoticeable. The colour becomes deeper after each attack of pain and gradually fades away in the intervals. In some patients a variation in the depth of tinge is noticed in the course of the day. When the jaundice deepens there is an increase in the amount of bile in the urine and a diminution in the amount in the stools. The jaundice in common-duct obstruction may be said to "ebb and flow."

Pain.—Pain may be constant and slight but is liable to characteristic exacerbations. In the attacks the pain comes on suddenly, rapidly attains a maximum, when it is colicky in character, and then perhaps quite suddenly it disappears. Pain may radiate across the epigastrium and be associated with attacks, so called, of "indigestion."

Fever.—The elevations of temperature are characteristic and give rise when recorded to a "steeple chart." There is a sudden elevation at the time of the onset of pain; there are a rigor, shivering followed by sweating, and a speedy return of the temperature to the normal, where it remains until the next attack. The paroxysms of pain, fever, and jaundice are ague-like in character and may occur with remarkable regularity.

During and after an attack there are tenderness and enlargement of the liver and probably also of the spleen. Itching of the skin is always present and at times is the most distressing feature in the case, rendering rest and sleep impossible. The cause of the attacks is probably to be found in a renewed attempt on the part of the duct to expel the stone. From the dilated portion of the duct the stone is made to enter the narrower portion below and a spasmodic muscular contraction is set up. In this way fresh damage is done to the duct, tension is increased, infection occurs, a cholangitis or an increase of an inflammatory condition already in existence takes place and the mucosa throughout the ducts swells and narrows the lumen. The obstruction, in fact, becomes for the time mechanically complete and partly for this reason and partly because of the renewed attack of cholangitis the jaundice deepens.

In the most severe forms of infection suppuration may arise in the duct. It is certain that infection is present in all cases attended by the symptoms just enumerated; it is equally certain that the infection rarely gives rise to suppuration. When a stone is removed from the common duct, even when jaundice is marked and long enduring, it is in my experience very rare to find pus in the ducts, however severe the clinical manifestations may have been. Some authors—Kehr and others—talk of fœtid pus as being not uncommonly found behind a stone in the common duct. In my experience it is almost unknown. A suppurative cholangitis, therefore, is a rare complication of impacted stone. It is also a most serious—often, indeed, a lethal—one. The suppuration may extend not only along the whole length of the common duct but also may involve the cystic duct and the gall-bladder (giving rise to empyema) and the

hepatic ducts. In some cases an abscess or abscesses may develop in the liver by direct extension of the infection along the ducts, giving rise to the condition known as biliary abscess.

A gall-stone may remain in the common duct for years. In one of my patients the symptoms had been present for nine years and a case of 17 years' duration is recorded by Körte. One of the consequences of so long-enduring an inflammation in the duct is that the head of the pancreas may be involved by infection of Wirsung's duct or, perhaps, by direct or by lymphatic infection. Chronic pancreatitis, as was pointed out by Riedel, is a not infrequent complication of gall-stones impacted in the common duct. Opie has shown that in all probability many cases of acute pancreatitis are due to the impaction of a stone of small size in the ampulla of Vater, the result being that the common duct and the duct of Wirsung are converted into a single channel; retrojection of bile along the duct of the pancreas then occurs. In such a case the symptoms come on with marked suddenness. They are epigastric pain and tenderness, followed by distension, vomiting, and collapse. The diagnosis most often made is one of intestinal obstruction. In acute pancreatitis with fat necrosis there is no increased leucocytosis; in acute infective cholangitis there is a marked leucocytosis. There are many other causes in addition to calculus which set up inflammatory changes in the duct but a consideration of these, though of great interest and importance, must be omitted here.

3. STRICTURE OF THE COMMON DUCT.

This may be congenital or acquired; the former condition would seem to be the more frequent.

(*a*) *Congenital stenosis* of the common duct is a part of the disease which has been described as "congenital obliteration of the bile-ducts." It is probable that, as Rolleston has suggested, the disease is primarily started during fœtal life "by poisons derived from the mother and conveyed to the liver of the fœtus and that a mixed cirrhosis and cholangitis are set up." The result on the ducts is that an obliterative cicatricial process is started. The stenosis is perhaps found more commonly at the lower end of the common duct than elsewhere. Above the narrowed part the duct may dilate and form a cyst. In one case, the specimen of which is in the Museum of Guy's Hospital, three and a half pints of bile were aspirated from the cyst and Oxley[6] records a case of a cyst containing 36 ounces of bile occurring in a child six weeks old.

The existence of this congenital obliteration or stenosis of the ducts in fœtal life and in early infancy is now well recognised. It is not so generally known that a condition, probably the same, certainly closely allied to it, is found in young adults. In them jaundice may first appear at any time between the ages of 10 and 25; the jaundice gradually deepens, there is no pain, nor are there, as a rule, any rigors or other evidences of infection. A tumour, cystic in character, may be recognised below the costal margin on the right side. On opening the abdomen a stricture of the common duct, generally near its lower end, has been found and cholecystenterostomy, or choledocho-enterostomy, or choledochotomy with drainage have been performed. An admirable history of such a case is given by Swain.[7] Other cases are recorded by Ashby,[8] by Körte,[9] by Konitzky,[10] by Seyffert,[11] and by Rostowzew.[12] In none of these cases was there any history of cholelithiasis. The stenosis came on insidiously and was probably the result of a continuation into adult life of a process begun in early infancy or in fœtal life. There would be an analogy then in the condition found in the pylorus described as "congenital, hypertrophic stenosis," which is believed to have a definite relationship with a similar condition which first attracts attention in young adults. Most of the cases proved fatal after operation. A successful operation for the similar condition is recorded by Treves.[13] The patient, aged 19 years, had been jaundiced since the age of three years. At the operation the lower end of the common bile-duct was found to be obliterated or absent. Cholecystenterostomy proved successful.

(*b*) *Acquired stenosis of the common duct.*—Acquired stricture of the common duct results, as a rule, from the healing of an ulcer which has been caused by the pressure or the constant fretting of a stone. In other cases the cause may be an ulceration due to typhoid fever or possibly to syphilis. A stone which has been long delayed in the duct may pass onwards into the duodenum, and a stricture then slowly develops. As a rule, a stone is found in the strictured duct above the obstruction. Hoffman, Merbach, Wyeth, and others have described a similar condition in the hepatic duct; in the cystic duct it is seen quite commonly. Pye-Smith[14] has described a case of cicatricial contraction of the common duct in a woman aged 26 years; a small stone lay immediately above the stricture. Johnson[15] records a remarkable case of stricture of the upper part of the common duct in a woman aged 38 years. The symptoms after being present for over a year disappeared, to return a year later shortly before her death. Phillips[16] records a case of "cartilaginous" stricture in the common duct. In neither of these cases were gall-stones found. Körte[17] records the case of a man, 40 years of age, who had suffered for five months from jaundice, rigors, and remittent fever. On opening the abdomen the gall-bladder was found to be dilated and stones were present in the cystic duct. The hepatic and common ducts were dilated. The common duct was opened and found to contain a stone behind a very narrow stricture. The stricture was excised and an end-to-end anastomosis was made between the cut ends. A drainage-tube was placed in the hepatic duct and cholecystenterostomy was performed. The patient died on the twelfth day from hæmorrhage from an ulcer on the lesser curvature of the stomach; a large vessel was found eroded. Pennato[18] gives notes of one case of stenosis of the common duct near its termination due to fibrous inflammatory thickening. There was an enormous distension of all the ducts behind the obstruction.

I have operated upon one case of this kind. The patient was a man, aged 63 years, who had the typical symptoms of a stone in the common duct and who had suffered from his disease for nearly four years. I found the upper part of the common duct greatly dilated, at least one and a half inches in diameter. In the dilated portion a small stone and much black sand were found. The common duct at the junction of its first and second portions rapidly narrowed like a wine-glass to its stem. I performed a plastic operation upon the duct and drained the hepatic duct. For nine weeks bile was discharged from a fistula but at the end of that time the wound became dry and the patient has since (for over nine months) been perfectly well.

A cicatricial contraction in a duodenal ulcer may cause a narrowing of the duct. I have met with only one such case. The scar in the duodenum felt like a stone fixed in the ampulla. I opened the duodenum to remove the stone, when a hard cicatricial nodule was found. There was no suspicion as to its malignancy. I therefore united the wound in the bowel to the gall-bladder (cholecystenterostomy), affording a complete relief to the symptoms. The patient remains well four and a half years after the operation. A case of excision of a simple stricture of the common duct is recorded by Kehr. In one case, in addition to that mentioned above, Körte excised a stricture of the common duct which he supposed was cicatricial. On microscopical examination it was found that the condition was carcinomatous. There can be no doubt that a stricture which, to the naked eye, appears merely fibrous may be undoubtedly carcinomatous; cases in support of this statement are related by Krokiewicz, Körte, and others.

4. CARCINOMA OF THE COMMON BILE-DUCT.

Cancer of the bile-ducts is rare; the common duct is affected far more frequently than the hepatic or cystic ducts. It is not improbable that the disease is more common than the records seem to show, for the resemblance in certain cases to a simple fibroid thickening of the duct is very close. It is well known that in a very large proportion of cases of carcinoma of the gall-bladder the condition is associated with, and its onset determined by, gall-stones. The dependence of cancer of the common bile-duct upon the prolonged irritation of stones is far less clear. In 40 cases

[6] THE LANCET, Dec. 8th, 1883, p. 988.
[7] THE LANCET, March 23rd, 1895, p. 743.
[8] Medical Chronicle, October, 1898, p. 28.
[9] Beiträge zur Chirurgie den Gallenwege, p. 227.
[10] Inaugural Dissertation, Marburg 1888.
[11] Inaugural Dissertation, Greifswald, 1888.
[12] Deutsche Medicinische Wochenschrift, 1902, p. 739.
[13] Practitioner, January, 1899, p. 18

[14] Transactions of the Pathological Society, vol. xxiv., p. 250.
[15] Brit. Med. Jour., 1880, vol. ii., p. 200.
[16] THE LANCET, Nov. 5th, 1887, p. 916.
[17] Beiträge zur Chirurgie den Gallenwege, p. 341.
[18] La Clinica Moderna Italiana, 1901, No. 6.

collected by Devic and Gallavardin[19] gall-stones were found nine times, three times in the duct and six times in the gall-bladder. Rolleston in 80 cases found that gall-stones were referred to in 62 cases; in 23 it was noted that they were present, in 39 that they were absent. The growth may affect any portion of the duct, but though there is no point of predilection the ends of the duct seem to be more commonly attacked than the central portion. In 57 cases mentioned by Rolleston the upper end, the junction of hepatic, cystic, and common ducts was affected 25 times, the middle part 11, and the lower end 21 times.

The growth appears in two characteristic forms which may be described as the *projecting* and the *infiltrating*. In the first it is small in size and projects as a firm, white nodule into the lumen of the duct. When during an operation the duct is gripped between the fingers the impression that the lump is a calculus is very strong. The projecting mass may undergo ulceration and bleeding be caused thereby. In the second form the growth infiltrates the duct, converting it for a part, or for the whole, of its length into a rigid thickened tube. The stricture thus formed, especially when localised, may readily be mistaken for a cicatricial mass, the result of the healing of an ulcer. The infiltrating form is seen more commonly at the upper end of the duct, the growth spreading upwards into the cystic and hepatic ducts. The growth, as a rule, is small, but Brenner records an instance in which the tumour formed was as large as a hen's egg and Rolleston one of the size of an orange. The growth does not spread easily to surrounding parts, a few glands may be enlarged, and deposits at times are seen in the liver, but metastases rarely occur. In a very few cases the growth is palpable on examination of the abdomen. Behind the growth, of either form, all the ducts are dilated; this is a constant feature. The gall-bladder is dilated also. Devic and Gallavardin in 18 cases of growth in the common duct found the gall-bladder distended in 17 and in 14 cases of cancer at the confluence of the three ducts seven times. In one half the cases the gall-bladder is easily palpable.

The growth begins insidiously and increases steadily. The symptom to which it first gives rise is jaundice, which begins almost imperceptibly, deepens by the slowest degrees, and never recedes. As the colour deepens less bile is noticed in the stools and bile appears in the urine. There is progressive, unceasing emaciation, week by week strength is lost, and the body-weight decreases. In all recorded cases the very striking cachectic appearance of the patient is mentioned. Ascites may rarely appear from pressure upon, or involvement of, the portal vein. Splenic enlargement is infrequent. In some cases the conditions may be complicated by the presence of a stone in the duct. The symptoms then are anomalous. In only one recorded case, that of Stokes, has there been intermittent fever. Death may be due to gradual exhaustion, to hæmorrhage, to rupture of the gall-bladder, or to the onset of an acute infection in the duct.

Treatment.—Carcinoma of the common duct is generally unsuspected. Only one case, so far as I am aware, has been positively diagnosed. The treatment that is necessary will depend upon the position and extent of the growth. If the growth be limited, of the "projecting" type, the part of the duct in which it lies should be removed. A cylinder, one inch or more, must be cut away and if enlarged glands are found they also must be removed. After the removal of the growth an end-to-end approximation may be made, if need be, when the duodenum has been "mobilised" after the method of Kocher. Drainage should be provided for, the circular suture being incomplete at one part where a tube is introduced. If end-to-end anastomosis cannot be performed the distal end of the severed duct may be closed by ligature and the proximal end anastomosed with the duodenum. Or both ends may be closed and cholecystenterostomy performed.

If the growth be extensive, of the "infiltrating" type, resection of the duct may still be possible, but suture of the divided ends, then so far separated, is out of the question. Ligature of the ends and cholecystenterostomy may be performed. If the growth is irremoveable a palliative operation—cholecystenterostomy—may give relief to the most urgent and most troublesome symptom, jaundice.

Dr. W. J. Mayo[20] makes some very practical remarks upon cases of operative defect of the common bile-duct. He records two cases in which growths were removed from the common duct—in one end-to-end anatomosis was performed and in the other choledocho-duodenostomy—and two cases in which a part of the duct was removed together with the cystic duct and the gall-bladder. Brenner reports[21] two cases operated upon by Jordan of Heidelberg. In both the cancer was unrecognised at the operation; both patients died and the condition of cancer of the duct was discovered post mortem. Kehr records one case of choledochectomy for cancer. I have only once had to deal with cancer of the common duct by operation. The growth involved the common hepatic, cystic, and common bile-ducts. The growth with the gall-bladder was removed and the distal end of the common duct, rendered mobile by freeing the duodenum, was sutured to the proximal cut end of the hepatic duct and drainage was instituted.

5.—PRESSURE UPON THE DUCT FROM WITHOUT.

There are numerous conditions which cause blocking of the common duct by compressing it from the outside or by causing kinking. These conditions are: (*a*) chronic inflammatory enlargement of the head of the pancreas; (*b*) tumours of the pancreas (cysts, carcinoma, calculus); (*c*) ulcer or carcinoma of the stomach or duodenum; (*d*) peritonitis which results in adhesions around the duct; (*e*) enlargements of the lymphatic glands along the duct due to tubercle, lymphadenoma, or carcinoma; (*f*) stone in the cystic duct, causing compression of the duct; (*g*) tumours growing from the kidney, adrenals, retroperitoneal tissues, or elsewhere; (*h*) aneurysms of the larger vessels, aorta, superior mesenteric, hepatic; and (*i*) hepatoptosis, or nephroptosis causing kinking of the duct. The mere enumeration of these conditions is sufficient to show that any detailed consideration of them would carry one far beyond the scope of this paper. Most of the conditions cause an interference with the common duct only as a matter of secondary significance, and they do not call, therefore, for any surgical interference with the duct itself.

OPERATIONS UPON THE COMMON DUCT.

The operations practised upon the common duct are: (1) choledochotomy; (2) choledochostomy; (3) choledochectomy; (4) choledochoplasty; and (5) choledocho-enterostomy. In all operations upon the common duct it will be found of great advantage to place a sandbag under the patient's back, behind the liver, to make a free opening into the abdomen by Bevan's incision, or by Mayo Robson's incision (a curtailed Bevan's incision), and, if possible, to lift up the lower edge of the right lobe of the liver, to turn it upwards and outwards through the incision, and in this way to put the ducts on the stretch and to bring them near to the surface. As soon as the abdomen has been opened and the exact condition of things discovered gauze swabs must be packed in the wound to cover and to protect all the parts in the immediate neighbourhood of the operation area. A large swab is passed backwards into the upper part of the kidney pouch, a second downwards towards the pelvis on to the transverse colon, and a third inwards to the middle line over the gastro-hepatic omentum. Over these large swabs smaller ones are placed which are changed from time to time as they are soiled. The larger ones remain throughout the operation.

1. *Choledochotomy.*—The common duct may be opened in its first, second, or third portion.

(*a*) *In its first portion* the duct is exposed by freeing the adhesions around it and rotating the liver in the manner already described. The stone is then located and is gripped between the finger and thumb of the left hand. With the stone so held a suture is introduced into the duct on each side of it, the needle being passed into the lumen of the duct and picking up the duct walls at two or three points. The stone acts the part of a "darning ball" (the ball thrust into a stocking that is being darned), making the introduction of the needle easy. The two sutures are of catgut and are left long. The duct is held up by traction upon them and incised on to the stone. The edges of the duct may be seized then with long fine vulsellum forceps. The stone is extracted and any other stones that are easily felt are taken away also. The finger is then passed into the duct, an additional glove-finger being put on. The finger should be passed upwards to the bifurcation of the hepatic duct and downwards to the ampulla. It is with the finger alone that calculi can be detected; a spoon or a probe is quite useless. When all the

[19] Revue de Médecine, July, 1901, p. 575.
[20] Annals of Surgery, July, 1905, p. 90.
[21] Virchow's Archiv, 1899, vol. clviii., p. 253.

stones are abstracted pieces of gauze are passed into the duct and will bring away with them some fine sand. If there is much thick muddy sand in the duct it may be necessary to wash it out with saline solution introduced by a syringe which gives good pressure. During all these manipulations care must be taken to prevent the soiling of parts by the constant packing with, and changing of, the swabs. When the duct is clear it may be closed with a suture or may be drained. If the gall-bladder is healthy and the cystic duct patent the duct should be closed by a continuous suture. The removal of the gall-bladder if the cystic duct is patent is, in my opinion, most inadvisable in cases of stone in the common duct. The two stitches, which have been already introduced as retractors, are tied, the upper ends and the lower ends of one to the corresponding ends of the other; after tightening the ends are left long till a continuous suture is passed over them. The gall-bladder is then opened and drained.

In many cases of common duct stone the gall-bladder is small, shrunken, and buried in adhesions. It is useless, therefore, for purposes of drainage. In such circumstances a tube must be introduced into the common duct and passed upwards to the hepatic duct. When so introduced it is fixed by a single catgut stitch and the wound in the duct is closed up to the tube by one or two interrupted sutures of catgut; the gall-bladder, if the patient's condition permits, should then be removed. In many cases I have removed the gall-bladder first and then have slit up the stump of the cystic duct into the common duct at its origin, where a tube is introduced after the removal of the stones. In either case, whether the duct is directly drained or not, a split rubber tube is passed down by the side of the duct and beyond it into the upper part of the kidney pouch.

The operation of choledochotomy in a simple case where the gall-bladder, though containing stones, is reasonably healthy and adhesions are few and easily separable, offers no difficulties whatever and can be completed within half an hour. But in many cases adhesions are numerous, of old standing, and therefore tough, and in some cases fistulous tracks may exist between the gall-bladder and the duodenum or the colon. The conditions in the gall-bladder may have undergone what Mr. J. Rutherford Morison aptly calls the "natural cure," the stones may be securely isolated in the gall-bladder or imbedded in the liver, and the cystic duct may be closed. A patient with such a condition has suffered perhaps for a great many years. She is therefore old and not improbably is feeble in health. If a stone in the common duct be causing urgent symptoms its removal alone may be as much as the patient can bear. The "cured" condition of things in the gall-bladder must then be ignored, for to deal with them would involve the performance of cholecystectomy, partial hepatectomy, or the closing of fistulous openings in the bowel. If the stone in the common duct is removed and the duct cleared of sand or other stones and drained the patient, after recovery from the operation, suffers no further troubles.

It is for such cases—for cases where, owing to the patient's age or general condition or to the local conditions present, nothing more than the common duct operation is possible, that I have adopted the method I have elsewhere described as "rotation of the common duct." By this method the adhesions are ignored and the stone is yet easily removed. As soon as the condition of things is seen the left hand of the surgeon is passed transversely inwards in front of the pylorus and above the stomach, along the gastro-hepatic omentum. When the hand is well placed the thumb is passed downwards to the common duct, so that the gall-bladder remnant buried in adhesions then lies in the cleft between the thumb and first finger and the tip of the thumb is against the stone. The hand is now rotated, the fingers are flexed, and the hand and wrists are bent over to the patient's left. The stone in the duct is thus brought well up into the wound and is easily seen. Behind and around it swabs are placed, a stitch, or two stitches, introduced, the duct is incised, the stone is removed, a tube is placed in, fixed with a stitch, and the operation is complete. Rotation of the duct avoids the necessity of the free separation of adhesions and converts what might be an exceedingly formidable and prolonged operation into a simple, speedy, and therefore far safer one.

There are cases in which when the stone or stones have been removed from the duct an immoveable one is felt in the ampulla. This must then be removed through the duodenum in the manner to be mentioned presently. The wound in the duct may well be left open until the ampulla is incised and a piece of gauze passed from the one opening to the other will bring away with it much fine sand.

(*b*) *In its second portion (retro duodenal choledochotomy).*—The retro-duodenal portion of the duct may be reached from behind by a procedure similar to that employed by Kocher in the "mobilising of the duodenum" as a preliminary to the performance of gastro-duodenostomy. This method was suggested at the German Surgical Congress in 1898 by Haasler. It had been found necessary three times in 18 operations for stone in the common duct. Oscar Bloch of Copenhagen has described a similar operation to this. In the very great majority of cases a stone which appears to be fixed in this portion of the duct can be moved upwards into the first portion. The operation is therefore very rarely necessary.

(*c*) *In its third portion (trans-duodenal choledochotomy).*—When the duodenum is opened the calculus may be found in the lower part of the duct or in the ampulla. If in the latter the ampulla is incised and the stone is extracted (McBurney's operation); if in the former the posterior wall of the duodenum over the duct is incised (Kocher's operation). The earlier steps in both methods are the same. The duodenum is exposed and if deeply placed or not easily accessible it may be freed by a vertical incision in the peritoneum to its right side. The stone is fixed by grasping it between the thumb and the fingers of the left hand. The duodenum is then opened by a vertical incision about one inch or a little more in length. The edges of this incision are grasped with fine vulsella and held apart. The greatest care is taken to prevent any leakage from the duodenum. The fluid therein is mopped up at once by swabs which are instantly discarded. As soon as the duodenum is well opened the stone is readily felt or, if in the ampulla, may be seen. If in the ampulla the edges of the opening are enlarged and the stone is taken away. If in the duct the walls of the duodenum are incised over the stone or the duct is slit up on a director passed into the ampullary orifice and the stone dislodged. In both cases a further search for other stones is necessary, the finger being passed upwards into the duct, which readily admits it. If the duct has had to be divided freely the incision may be closed by suture or the opening left patent, the operation being then known as choledocho-duodenostomy.

2. *Choledochostomy* is performed when the common duct is dilated so as to form a cyst. In most cases the swelling has been mistaken for the gall-bladder. (For records of cases see "Gallstones and their Surgical Treatment," second edition, pp. 418 *et seq.*)

3. *Choledochectomy* is performed in cases of malignant disease or when in the removal of the stone the duct has been torn across. Cases are recorded by Doyen, Mayo, and myself. The ends of the duct may be approximated, or the distal end closed, and the proximal implanted into the duodenum, or both ends may be closed and cholecystenterostomy performed, or the defect in the duct may be repaired by a flap taken from the stomach.

4. *Choledochoplasty.*—I have once performed a plastic operation upon the common duct in a case of simple stricture of the duct, slitting the duct up longitudinally and stitching it transversely; an opening was left for drainage. The result has been very good. Kehr has repaired a defect in the common duct by turning a seromuscular flap upwards from the stomach.

5. *Choledocho-enterostomy* is performed when there is an impermeable stricture of the common duct which is greatly dilated behind the obstruction. A number of cases have been recorded since Riedel first performed the operation in 1888. Kocher's method of choledocho-duodenostomy between the third portion of the duct and the second portion of the duodenum has already been mentioned.

In cases where the common duct is drained it is desirable to keep in the tubes for at least a fortnight. An examination of a post-mortem specimen of common duct obstruction by stone will show the evidences of cholangitis which may extend upwards to the minute ducts in the liver. To give time for these ducts to rid themselves of infection is important. It is my custom in all these cases to administer urotropine to the patient immediately after the operation and for a few days before it if opportunity permits. In a case which I published in THE LANCET[22] the excretion of urotropine in the bile was proved by the rapid disappearance of typhoid organisms which were present therein when this drug was administered in ten-grain doses thrice daily.

Leeds.

[22] THE LANCET, June 6th, 1903, p. 1586.

PRIMARY PNEUMOCOCCUS PERITONITIS.

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As cases of acute peritonitis due to a primary infection by the diplococcus pneumoniæ are uncommon, I think the following case should be put on record.

A married woman, aged 29 years, was admitted to the Metropolitan Hospital on Oct. 28th, 1904, with the following history. With the exception of pain after meals for the past six months she had been quite well until 14 days previously, when she was seized with abdominal pain accompanied by diarrhœa and vomiting. This she attributed to an error of diet and took some brandy which relieved the pain. She remained in bed for two days, taking no solid food, and on the third day had recovered sufficiently to resume her household duties. Two days before admission she was again seized with acute abdominal pain and diarrhœa; she felt sick but did not vomit. She again treated herself but as the symptoms continued on the following day she consulted her medical man who gave her medicine which stopped the pain and diarrhœa for the time. In the evening the pain returned and the abdomen commenced to swell.

On admission to hospital the patient looked ill, her face was flushed and drawn, and the tongue was dry and furred. She complained of nausea and epigastric pain. The abdomen was distended, more so above the umbilicus than below it. Movement was impaired but there was no muscular rigidity. There was some tenderness over the right iliac region but no evidence of a tumour. The abdomen was resonant except over the hypogastrium. Liver dulness was present. Rectal examination revealed nothing abnormal. Her menstrual periods were regular and one was then in progress. The heart and lungs were normal. Her temperature was 103·6° F., the pulse was 128, and the respirations were 32. A catheter was passed and 44 ounces of urine were drawn off. On the next morning a turpentine enema was given and resulted in the passage of a loose motion with some flatus. The patient's general condition was about the same. Her temperature was 101° and her pulse was 120. When I saw her in the evening she complained of epigastric pain. She had been sick once bringing up a small quantity of bile-stained fluid. The distension was most marked in the upper part of the abdomen and there was tenderness on pressure in this region but the lower segment was less distended and there was no tenderness. The iliac fossæ were quite free from swelling or tenderness. On the next day the distension had increased. An examination of the blood gave a negative Widal reaction and a leucocytosis of 18,500. My colleague, Dr. E. Cautley, kindly saw the case with me and we decided to explore the abdomen.

On opening the abdomen in the middle line above the umbilicus the stomach, which was greatly distended, presented. It was found necessary to introduce a stomach-tube and get rid of the distension before exploring the upper part of the cavity. A quantity of pus was found between the stomach and the liver with thick fibrinous deposits on the surface of the viscera in the vicinity. The pus was odourless, creamy, and of a greenish-yellow colour, with numerous flocculi floating in it. Some of this was collected and set aside for bacteriological examination. The fibrinous deposits adhered to the peritoneal covering of the viscera and on removing them that membrane was lustreless, reddened, and in places inclined to bleed. No lesion of the stomach, duodenum, or gall-bladder could be found. A second opening was made below the umbilicus and a similar condition was found there. The appendix, intestines, and uterine appendages were each in turn examined but without finding anything to account for the onset of the condition. The peritoneal cavity was then sponged out and well flushed with sterilised water. A Keith's tube was placed in the pelvis and the rest of the incisions were closed. The patient recovered from the anæsthetic but in the evening became very restless and later delirious and died early the following morning. The pus removed at the time of the operation contained encapsulated diplococci and a pure culture of diplococci was obtained from it. There were no other organisms present.

Necropsy.—The peritonitis was general and there was a considerable quantity of blood-stained fluid in the peritoneal cavity. The posterior surface of the stomach and the duodenum were adherent to the structures behind them and were with difficulty separated. There were no signs of perforation in either. Internally the stomach showed evidence of old ulceration on the posterior surface. The intestines were normal except for inflammatory areas on the peritoneal aspect. The appendix was quite healthy. The uterus, ovaries, and tubes were normal and showed changes corresponding to a recent menstrual period. The spleen was large and soft. The heart, lungs, pleuræ, and kidneys were all apparently normal. Nothing was obtained from a blood culture.

The first records I can find of the above condition in adults are two cases by Weichselbaum, published in 1889; since then 29 cases in all have been recorded and of these only seven occurred in this country. Jensen has collected 106 cases of pneumococcus peritonitis—48 in adults and 58 in children. But these 48 cases included those secondary to pneumonia and others part of a general infection. Some were localised in character, others were diffused or general, and in discussing the prognosis he deals with these forms collectively. I think, however, it would be wiser to separate them, although it is difficult from the records in some cases to decide in which category to place them. Of the 31 cases which I have collected I have classified 23 as general or diffused and eight as circumscribed, but it is doubtful whether three of the former should not be considered as belonging to the latter group. In one of the doubtful cases the peritonitis ended in resolution without operative interference. Of the diffused cases there were affections of the stomach in five: in three a perforating ulcer, in one a chronic ulcer, and in one carcinoma. The appendix was affected in three cases and in one of these the cavity of that organ as well as its wall contained pus from which the pneumococcus was cultivated. Four were alcoholic subjects and in two of these cirrhosis of the liver and ascites were present. In one case there was a ruptured pyosalpinx. Pleurisy was noted in four cases and in one an empyema followed the peritonitis. In one case although pneumococci were found in the fluid withdrawn by puncture from the peritoneal cavity an hour after death, yet 25 hours later when the post-mortem examination was made the bacillus coli communis was present in such numbers that pneumococci could only with difficulty be found. Of the 23 cases eight were operated upon. 19 died and four recovered. But if we deduct the three doubtful cases it leaves 20 cases with two recoveries. When we consider that gross lesions in addition to the peritonitis were present in at least 11 cases the prognosis is not necessarily so bad as these figures would suggest. It is also open to question whether a better result would not have been obtained if all the cases had been submitted to operation and if in some of those which were operated upon the treatment had been adopted earlier.

I can only find records of eight cases of circumscribed peritonitis in adults. This is interesting, as in children these cases are more common than the diffuse. Jensen mentions 33 cases out of a total of 58. The prognosis is much better in this variety and operative interference holds out the best prospect of a speedy recovery. Of the eight cases all were operated upon and seven recovered. The case which terminated fatally was complicated by pneumonia and endocarditis. It has been stated by Brunn and other writers that in adults males are more often attacked than females, but of these 31 cases 13 were males, 17 females, and in one case the sex is not stated.

As regards the method of infection, in some cases no doubt it is through the intestinal tract and in this series of cases it is to be noted that in several there were lesions of the stomach and appendix and in others evidence of intestinal irritation due to alcohol. Bryant suggests that the diarrhœa which is so often present may be evidence of a gastro-enteritis which determines the passage of the organism through the bowel wall. In my case there was a history of drug-taking to avoid pregnancy and the irritation set up by this may have acted in a similar manner. A case of fatal peritonitis following an overdose of purgative pills taken for a similar purpose was recently recorded in THE LANCET. At the necropsy extensive enteritis and peritonitis were found, but there is no mention of a bacteriological examination of the exudate. The infection, no doubt, reaches the peritoneum in some cases by the vagina and uterus. Among children this method of infection would, no doubt, account for its more frequent occurrence in girls. Michaut mentions

33 cases, 27 in girls and six in boys, and Brun's figures about correspond with these. In one case recorded by Lop the peritonitis followed delivery and pneumococci were found in the lochia. Some cases are, no doubt, manifestations of a general pneumococcus blood infection, whereas others, which start as a peritonitis, die from a subsequent pneumococcus septicæmia.

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Melbourne.

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BY G. RUTHERFORD JEFFREY, M.B., CH.B. GLASG.,
SENIOR ASSISTANT PHYSICIAN, AYR DISTRICT ASYLUM.

THE following case seems to be sufficiently rare to be worthy of record. The patient, a married woman, aged 60 years, was admitted into the Ayr District Asylum on Nov. 3rd, 1898, suffering from chronic mania, although at the commencement of her illness 26 years ago her mental condition was one of melancholia. She had always enjoyed good bodily health, was the mother of five children, and was a stoutly built, robust, and well-nourished woman. There was no history of indigestion, colic, or jaundice and her family history was unimportant. Until Friday, Sept. 22nd, 1905, she was perfectly well physically and it was only on the evening of that day that her illness commenced. She was in her usual state of health on the Friday and had taken her food well, but in the evening she complained of feeling a little sick, on account of which she was sent to bed. About one and a half hours afterwards the feeling of nausea developed into actual vomiting, accompanied by great abdominal pain, and when seen at 10 P.M. her condition was as follows. She was in a state of great collapse and was evidently in great suffering. She was retching and vomiting profusely, the vomited matter soon becoming bilious in character. She complained of great abdominal pain but was not able to locate it to any special area of the abdomen. On one occasion she described the pain as somewhat "bearing in character and as if something was moving." Her temperature was 98° F.; her pulse, which was weak, rapid, and fluttering, numbered 120 beats to the minute. Her tongue was dry and furred and her breath was very foul. On palpation the abdomen was universally "tender" and percussion revealed some distension of the stomach and tranverse colon.

The vomiting and retching continued at short intervals during the night, but the pain was somewhat alleviated by the application of hot fomentations to the abdomen. The patient's condition on the following morning was much the same except that she was weaker and was as well slightly jaundiced. The vomiting and retching—which resisted all treatment—continued throughout the day, whilst the pain in the abdomen remained much about the same. In the evening she was more collapsed, her pulse was 130, and her temperature, which in the morning was 98°, had now risen to 100°. Her tongue was dry and coated with a thick, dirty fur, her extremities were cold and her brow was covered with a cold "clammy" sweat. The distension of the stomach and colon was more marked; the liver was now distinctly palpable and extended well below the costal margin. Throughout the Sunday the patient's condition presented little change. The pain became worse, necessitating the use of morphine, the retching and vomiting continued, she complained of great thirst, and she had now some diarrhœa. There was no marked change in the temperature but her pulse was almost imperceptible. She became gradually weaker, the pain and vomiting continued, and she died at 2.20 P.M. on Monday, in less than three days from the commencement of her illness.

Necropsy.—On Sept. 26th a post-mortem examination was made. The body was that of a well-nourished woman. Post-mortem lividity and rigidity were present. The thorax and abdomen were opened in the usual way and the viscera were exposed. The organs, *in situ*, showed marked distension of the stomach and transverse colon, the liver was somewhat enlarged, and there was marked fatty infiltration of the omentum. The heart was healthy, as also were the lungs, with the exception of a few old pleural adhesions at the right apex and slight congestion of the right lower lobe. On passing the hand into the abdomen a large firm mass was detected extending transversely across the abdomen, firmly adherent to all the surrounding structures, and in position occupying that of the pancreas. With difficulty the mass was separated from the surrounding structures and it weighed 11 ounces. The surface was dark-red in colour—in some places almost black—and on section only in parts could the true pancreatic tissue be recognised, the whole substance being much congested and in places showing areas of necrosis. The omentum and mesentery were abnormally fatty and on both were seen numerous white specks (the "fat necrosis" of Baker). The liver, which was adherent to the under surface of the diaphragm, weighed 51 ounces, and was enlarged, pale, soft, and fatty. The gall-bladder, the walls of which were thickened, contained a small quantity of bile, and as well four mulberry calculi, varying in size from that of a cherry to that of a pea. The spleen was congested and weighed six and a half ounces. The right kidney weighed ten ounces, the left seven ounces, and both organs showed well-marked cloudy swelling. With the exception of the distension of the stomach and transverse colon the gastro-intestinal tract was normal.

Microscopical examination.—Owing to changes—necrotic or post-mortem—the sections prepared did not stain properly and the glandular tissue itself stained but faintly and diffusely. In various parts of the gland evidence was found of multiple, more or less recent, small hæmorrhages from the capillaries, all the vessels were engorged, and many of the larger vessels, both arteries and veins, showed signs of an acute inflammatory process. There was no general invasion of the tissues by micro-organisms but the larger pancreatic ducts were loaded with a bacillus probably the bacillus coli communis.

Comments.—As regards the etiology of the disease not much seems to be known. Osler in his "Text-book of Medicine," says: "Many of the patients are addicted to alcohol, others had suffered occasionally with severe pains and vomiting or with gall-stone colic."[1] The pathology of the disease is obscure. Some writers emphasise the association of this condition with gall-stones and certainly in the case above quoted stones were found in the gall-bladder. In Osler's "Textbook of Medicine" a case is related in which "a small calculus had lodged in the diverticulum of Vater, closing its duodenal orifice and converting the common bile-duct and the duct of Wirsung into a closed channel; bile, finding its way into the pancreas, had caused hæmorrhagic inflammation." Other writers again assert that bacterial infection has something to do with the immediate cause. In the case

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BY G. RUTHERFORD JEFFREY, M.B., CH.B. GLASG.,
SENIOR ASSISTANT PHYSICIAN, AYR DISTRICT ASYLUM.

THE following case seems to be sufficiently rare to be worthy of record. The patient, a married woman, aged 60 years, was admitted into the Ayr District Asylum on Nov. 3rd, 1898, suffering from chronic mania, although at the commencement of her illness 26 years ago her mental condition was one of melancholia. She had always enjoyed good bodily health, was the mother of five children, and was a stoutly built, robust, and well-nourished woman. There was no history of indigestion, colic, or jaundice and her family history was unimportant. Until Friday, Sept. 22nd, 1905, she was perfectly well physically and it was only on the evening of that day that her illness commenced. She was in her usual state of health on the Friday and had taken her food well, but in the evening she complained of feeling a little sick, on account of which she was sent to bed. About one and a half hours afterwards the feeling of nausea developed into actual vomiting, accompanied by great abdominal pain, and when seen at 10 P.M. her condition was as follows. She was in a state of great collapse and was evidently in great suffering. She was retching and vomiting profusely, the vomited matter soon becoming bilious in character. She complained of great abdominal pain but was not able to locate it to any special area of the abdomen. On one occasion she described the pain as somewhat "bearing in character and as if something was moving." Her temperature was 98° F.; her pulse, which was weak, rapid, and fluttering, numbered 120 beats to the minute. Her tongue was dry and furred and her breath was very foul. On palpation the abdomen was universally "tender" and percussion revealed some distension of the stomach and tranverse colon.

The vomiting and retching continued at short intervals during the night, but the pain was somewhat alleviated by the application of hot fomentations to the abdomen. The patient's condition on the following morning was much the same except that she was weaker and was as well slightly jaundiced. The vomiting and retching—which resisted all treatment—continued throughout the day, whilst the pain in the abdomen remained much about the same. In the evening she was more collapsed, her pulse was 130, and her temperature, which in the morning was 98°, had now risen to 100°. Her tongue was dry and coated with a thick, dirty fur, her extremities were cold and her brow was covered with a cold "clammy" sweat. The distension of the stomach and colon was more marked; the liver was now distinctly palpable and extended well below the costal margin. Throughout the Sunday the patient's condition presented little change. The pain became worse, necessitating the use of morphine, the retching and vomiting continued, she complained of great thirst, and she had now some diarrhœa. There was no marked change in the temperature but her pulse was almost imperceptible. She became gradually weaker, the pain and vomiting continued, and she died at 2.20 P.M. on Monday, in less than three days from the commencement of her illness.

Necropsy.—On Sept. 26th a post-mortem examination was made. The body was that of a well-nourished woman. Post-mortem lividity and rigidity were present. The thorax and abdomen were opened in the usual way and the viscera were exposed. The organs, *in situ*, showed marked distension of the stomach and transverse colon, the liver was somewhat enlarged, and there was marked fatty infiltration of the omentum. The heart was healthy, as also were the lungs, with the exception of a few old pleural adhesions at the right apex and slight congestion of the right lower lobe. On passing the hand into the abdomen a large firm mass was detected extending transversely across the abdomen, firmly adherent to all the surrounding structures, and in position occupying that of the pancreas. With difficulty the mass was separated from the surrounding structures and it weighed 11 ounces. The surface was dark-red in colour—in some places almost black—and on section only in parts could the true pancreatic tissue be recognised, the whole substance being much congested and in places showing areas of necrosis. The omentum and mesentery were abnormally fatty and on both were seen numerous white specks (the "fat necrosis" of Baker). The liver, which was adherent to the under surface of the diaphragm, weighed 51 ounces, and was enlarged, pale, soft, and fatty. The gall-bladder, the walls of which were thickened, contained a small quantity of bile, and as well four mulberry calculi, varying in size from that of a cherry to that of a pea. The spleen was congested and weighed six and a half ounces. The right kidney weighed ten ounces, the left seven ounces, and both organs showed well-marked cloudy swelling. With the exception of the distension of the stomach and transverse colon the gastro-intestinal tract was normal.

Microscopical examination.—Owing to changes—necrotic or post-mortem—the sections prepared did not stain properly and the glandular tissue itself stained but faintly and diffusely. In various parts of the gland evidence was found of multiple, more or less recent, small hæmorrhages from the capillaries, all the vessels were engorged, and many of the larger vessels, both arteries and veins, showed signs of an acute inflammatory process. There was no general invasion of the tissues by micro-organisms but the larger pancreatic ducts were loaded with a bacillus probably the bacillus coli communis.

Comments.—As regards the etiology of the disease not much seems to be known. Osler in his "Text-book of Medicine," says: "Many of the patients are addicted to alcohol, others had suffered occasionally with severe pains and vomiting or with gall-stone colic."[1] The pathology of the disease is obscure. Some writers emphasise the association of this condition with gall-stones and certainly in the case above quoted stones were found in the gall-bladder. In Osler's "Textbook of Medicine" a case is related in which "a small calculus had lodged in the diverticulum of Vater, closing its duodenal orifice and converting the common bile-duct and the duct of Wirsung into a closed channel; bile, finding its way into the pancreas, had caused hæmorrhagic inflammation." Other writers again assert that bacterial infection has something to do with the immediate cause. In the case

[1] Osler: Text-book of Medicine.

related the larger ducts were loaded with a bacillus which might possibly have been the starting point of the mischief. Blocking of the pancreatic artery or one of its branches by an embolus, also an acute endarteritis followed by thombosis, have also been suggested as possible explanations of the mischief.

The relation of fat necrosis to pancreatic disease is a recognised fact; small whitish areas may be found in the pancreatic tissue, in the mesentery, omentum, &c. In this case those white specks were abundant and easily recognised. "Flexner has produced acute hæmorrhagic pancreatitis by injecting artificial gastric juice into the duct of Wirsung. Opie has recently made the interesting observation that hæmorrhagic pancreatitis and fat necrosis may be produced by injecting bile into the pancreatic duct of dogs and has also shown that the penetration of bile into the pancreas may be the cause of these conditions in human cases."[2]

Symptoms.—From the very onset of her illness the patient was undoubtedly very ill, many of the symptoms pointing to some grave abdominal disease, either of the nature of an obstruction or an acute perforating peritonitis. It soon, however, became manifest that this was not so, whilst the hepatic enlargement, the character of the pain, &c., suggested the diagnosis of an acute hepatitis with gall-stone colic. No actual pancreatic swelling was present, owing probably to the enormous amount of fat in the abdominal wall and also to the amount of distension of the stomach and transverse colon.

With reference to the symptoms Professor Osler in his "Text-book of Medicine" says: "One of the most characteristic features is the suddenness of the onset, usually with violent colicky pain in the upper part of the abdomen. Nausea and vomiting follow with collapse symptoms, more or less severe according to the intensity of the attack. The abdomen becomes swollen and tense and there is constipation. The temperature at first may be low, subsequently fever sets in, sometimes initiated by a chill. Collapse symptoms supervene and death occurs usually from the second to the fourth day or even earlier."

The diagnosis seems to be extremely difficult, especially so at the commencement of the attack, many of the symptoms suggesting some acute abdominal mischief. "Acute pancreatitis is to be suspected when a previously healthy person, or a sufferer from occasional attacks of indigestion, is suddenly seized with a violent pain in the epigastrium followed by vomiting and collapse and in the course of 24 hours by a circumscribed epigastric swelling, tympanitic or resistant, with slight elevation of temperature. Circumscribed tenderness in the course of the pancreas and tender spots throughout the abdomen are valuable signs." (Fitz.)[3]

Treatment.—As regards this, with the exception of alleviating the pain there is not much that can be done, although surgical interference has in some cases proved successful. Mr. T. C. Litler Jones relates a case in which laparotomy was performed, the pancreas incised and packed with gauze, the patient ultimately making a complete recovery.[4] For the persistent nausea and vomiting nothing seems to do any good. This, along with the severe suffering, makes, in the absence of surgical interference, the use of morphine quite indispensable.

I am indebted to Dr. C. C. Easterbrook for his kindness in allowing me to publish the case, to Dr. W. Ford Robertson for the preparation of microscopic specimens, and to Dr. D. Ashley Wilson who assisted with the post-mortem examination.

Ayr.

A CASE OF VOLVULUS OF THE ASCENDING AND TRANSVERSE COLON, WITH UNUSUAL COMPLICATION.

BY JAMES PHILLIPS, F.R.C.S. EDIN.,
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THE patient, who was a woman, aged 45 years, having gone to bed in her usual health, woke up at 3 A.M. on the morning of Dec. 9th, 1905, with very severe general abdominal pain and vomiting. The usual household remedies proving useless she sent for Dr. R. A. R. Lankester who saw her about noon and found her dressed and downstairs. She looked very ill, with drawn features, and complained of agonising abdominal pain. On examination it was found that the abdomen was not distended and that it moved with respiration; it was generally tender and no localised swelling was made out. Dr. Lankester prescribed morphine and bismuth and about 5 P.M. his partner, Mr. R. Mercer, saw her and found all the symptoms worse and the abdomen becoming much distended. He gave a hypodermic injection of morphine and ordered an enema and saw her again at 8.30 P.M., when, finding that the enema had had no result, he sent her to the Bradford Infirmary. She had had no vomiting at all since 2 P.M.

I saw the patient at the infirmary about 10 P.M. Her pulse was thready and quite 140 per minute. She had the abdominal facies in a marked degree. She was a spare woman and her abdominal parietes were visibly stretched over an irregular swelling rather more marked to the right of the middle line and looking not unlike pregnancy in the seventh or eighth month. On palpation the swelling was very tense and on percussion but slightly tympanitic. On opening the abdomen below the umbilicus an intensely congested cystic swelling presented, the serous surface of which showed signs of splitting when an attempt was made to pass the hand into the abdomen. The swelling was packed round with gauze and incised; air and grumous viscid fluid escaped and as it emptied itself the viscus, which was later found to be the enormously dilated stomach, was pulled out. The gastro-hepatic omentum was purple with extravasated blood. The incision in the stomach was closed and the now obvious twist, from left to right, of the transverse and ascending colon was untwisted and the bowel involved, which was distended to a diameter of at least four inches, was incised, drained, and sutured as the stomach had been. In closing the abdomen the cæcum, which was normal, was sutured in the lower angle of the wound, where it could be opened later in case the distended bowel remained paralysed. The operation lasted in all 40 minutes. The patient had several liquid motions during the next 16 hours and took sips of hot water freely, but her pulse never improved and she died at 3 P.M. the following day.

The necropsy showed that there was no peritonitis. The stomach was dilated to four or five times the normal size; it contained much gas and some grumous fluid and also a few small whole white grapes. The large gut from a point a few inches above the cæcum to just short of the splenic flexure was very dilated and congested but had recovered considerably from the condition seen at the operation. No anatomical abnormality was observed.

Only one case of volvulus of the ascending colon is quoted in Treves's "Intestinal Obstruction" and I have been unable to find any recorded case similar to the above in which the involvement of the transverse colon led to dragging *via* the gastro colic omentum on the stomach. The gastro-hepatic omentum was so stretched as to cut off the blood-supply to the stomach, which then became rapidly and enormously dilated until it reached to within a couple of inches of the pubes. The operation relieved the strangulation of the colon and of its blood supply and there is every reason to think that the large bowel would have recovered itself. But the stomach was too severely damaged to recover and the patient died from acute gastric dilatation. It is interesting to note that after 2 P.M. (11 hours from the onset of the symptoms) there was no vomiting or even retching; at the hour named presumably the contractile power of the gastric muscle became completely paralysed. It might be a question whether the whole grapes found post mortem in the stomach had any etiological connexion with the condition.

Bradford.

[2] Ibid. [3] Ibid.
[4] THE LANCET, Feb. 18th, 1905, p. 417.

THE TREASURER OF ST. THOMAS'S HOSPITAL: PRESENTATION OF A PORTRAIT.—On Jan. 16th, in the Governors' Hall of St. Thomas's Hospital, the portrait of Mr. J. G. Wainwright, J.P. (painted for members of the governing body and the staff by Mr. J. H. Bacon, A.R.A.), was presented by the Right Hon. the Lord Mayor of London and received on behalf of the hospital by Mr. A. P. Boyson, senior almoner of the hospital. Dr. S. J. Sharkey, senior physician to the hospital, presented a replica of the portrait to Mrs. Wainwright. In unveiling the portrait the Lord Mayor said that Mr. Wainwright had been a governor of the hospital for 40 years and during that time he had done admirable work for the institution. In 1890 he was appointed treasurer and as such he was the right man in the right place. He expressed the hope that Mr. Wainwright might be spared for many years to come to carry on his work.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

DISTRICT HOSPITAL, BUKIT MERTAJAM, STRAITS SETTLEMENTS.

A CASE OF PENETRATING WOUND OF THE ABDOMINAL PARIETES WITH PROTRUSION OF WOUNDED INTESTINE.

FOR the notes of the case we are indebted to Dr. J. W. W. Hogan, assistant surgeon.

A Chinese carter, about 30 years of age, was brought to the hospital from Kulim at 5 P.M. on August 7th, 1905. He had been gored by his own buffalo that morning at 8 o'clock. On admission he was in a partially collapsed state, his temperature was 97° F., his pulse was small and rapid, his tongue and lips were dry, and he had an anxious expression of countenance and was apparently suffering some pain, as he groaned at intervals. He had a large piece of dirty cloth wrapped round his abdomen which was saturated in front with blood and semi-liquid fæces. When this was removed a mass of omentum and intestine with semi-solid fæces was exposed which had protruded through a wound in the abdominal walls. The wound was horizontal in direction, about two and a half inches long; the inner end was about one and a quarter inches immediately above the umbilicus. The fæces having been removed (in doing which the omentum had to be torn through in several places) about 12 inches of unwounded small intestine and about the same length of wounded large intestine were revealed. The large intestine was the descending colon, probably the "omega loop," and had been perforated in four places apparently by the one thrust of the horn of the buffalo, the wounds varying in size from two and a half inches to three-quarters of an inch longitudinal to the long axis of the gut. The gut was distended with solid fæces which had to be squeezed out through the wounds before the edges could be well approximated to enable sutures to be applied. The wounds were closed by Lembert's interrupted sutures (24 or 25 stitches to the larger and 10 or 12 to the smaller wounds) of sterilised catgut. The whole of the protruded gut and omentum was carefully flushed with boric lotion (all the fæcal matter that could be found was removed) and carefully returned into the abdominal cavity. The abdominal wound was not closed and a wick of blue gauze was inserted for drainage. Boric acid was then freely dusted on the wound and a pad of perchloride cotton-wool was placed over it secured by a roller bandage. Opium pills were given every four hours. All the above proceedings took about two hours; no chloroform was administered. The urine had to be drawn off by catheter that night at 9 o'clock. On the following morning the dressings were saturated with a sanious fluid smelling strongly of fæces; similar dressings to those used on the previous day were applied. The patient's temperature was normal, the pulse was weak but slow, and not much pain was complained of. The urine had to be drawn off with a catheter. For the first few days the dressings when being changed smelled strongly of fæces and some yellowish liquid fæces welled up from the outer angle of the wound when the gauze wick was withdrawn but this gradually ceased. The bowels were opened freely per rectum on the third day, the fæces being semi-solid, and the catheter was dispensed with on the fourth day. The temperature never rose above the normal and on August 30th the wound was small, superficial, and healthy. The patient could walk about and was perfectly comfortable and free from pain. The bowels were regular and the motions were well formed. The patient was discharged from hospital on Sept. 25th with the wound firmly healed and no tendency to ventral hernia.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Notes on Two Cases of Cholecystitis treated with Inoculations of Bacillus Coli.—A Note on Phagocytosis of Red Blood Corpuscles.—On a New Method of Distinguishing Bacillus Typhosus and Bacillus Coli.—On the Relationship of the Temperature to the Opsonic Curve in Acute Anthrax Infection.

A MEETING of this society was held on Jan. 16th, Professor A. E. WRIGHT, Vice-President, being in the chair.

Professor WRIGHT and Dr. S. R. REID gave an account of two cases of Cholecystitis treated with Inoculations of Bacillus Coli. The first case was that of a woman with complete obstructive jaundice. Operation was performed and gall-stones were removed but the fever and the jaundice persisted. The bile was discharged through a sinus and was mixed with thick mucus. A pure culture of bacillus coli was obtained from the mucus. The opsonic index of the patient was estimated and an injection of 15,000,000 bacilli coli was given. This was too small a dose to give any result and the injections were raised to 45,000,000 and to 100,000,000. The immediate result of the injections was that the patient was considerably worse, but subsequently the mucus diminished, bile began to pass into the intestines, the sinus closed, and the patient made a complete recovery. The second case was that of a man who was operated on for gall-stones some two months previously, 14 stones being removed from the gall-bladder. The sinus remained open and the patient made but little improvement. Bacilli coli were found in the mucus from the bladder and the opsonic index of the patient was estimated. An inoculation of 200,000,000 bacilli coli was given and the opsonic index was raised to 1·8. The sinus closed. A further rise of temperature occurred and the sinus was again opened. After another injection this closed again but a rigor occurred and owing to the self-inoculation the opsonic index rose to four times the normal. This again fell and the sinus again closed.

Professor WRIGHT read a note on Phagocytosis of Red Blood Corpuscles. He said that these observations were made quite incidentally. A man was taken suddenly ill with high fever and severe collapse. After a few days a brawny swelling formed at the root of the neck. This was incised but no pus was found, but a portion of the tissue was necrotic. From this tissue a pure cultivation of pneumococcus was obtained. On examination of the blood it was found that there were several red blood corpuscles within the white cells. When the serum from the blood of this patient was added to the washed blood in laboratory use it produced a phagocytosis of the red blood cells. In a second case, that of a man with cystitis due to malignant disease and pneumococcal infection, it was found that when his serum was added to the washed blood corpuscles in laboratory use a similar phagocytosis was produced. In a third case a similar result was obtained. Professor Wright pointed out that in all these cases the anæmia and cachexia were marked and he attributed the result obtained to the fact that the vitality of some of the red cells was lowered by the presence of the toxin in the serum and that the red cells were removed by being taken up by the white cells.—Dr. C. J. MARTIN pointed out that in examining a number of films made from the spleen of animals dead from plague he had come across white cells with red blood cells within them.

Mr. L. S. DUDGEON read a preliminary communication on the Use of Urotropin Medium as a Differential Diagnosis between Bacillus Typhosus and Bacillus Coli. From a series of experiments he found that the most suitable strengths of urotropin were 0·1 per cent., 0·5 per cent., and 1 per cent., more especially in a broth medium. He had also employed the same strengths of urotropin in agar both for slants and for plating. He had experimented with cultures of bacillus typhosus obtained from two cases of bone abscesses and stock cultures isolated from the spleen in cases of typhoid fever. The results were constant. Bacillus typhosus grew well in 0·1 per cent. urotropin broth, fairly well in 0·5 per cent. but the growth was delayed, while 1 per cent. urotropin broth was always sterile, whereas bacillus coli obtained from cases of peritonitis and cystitis gave an abundant

growth in 0·1 per cent. and 0·5 per cent. and a fair growth in 1 per cent. If a tube of 1 per cent. urotropin broth was inoculated with the typhoid bacillus and incubated at 37° C. for 24 hours and then considerably diluted (twice and three times) and then re-incubated no growth resulted in any case. A paratyphoid bacillus (Kral) was found to grow well in 0·1 per cent. urotropin agar, a very slight and delayed growth occurred in 0·5 per cent., while only one colony was obtained in 1 per cent. at the end of 11 days' incubation at 37° C. A paratyphoid bacillus (L) gave a good growth in 0·1 per cent. urotropin broth, a fair growth in 0·5 per cent., and a faint growth in 1 per cent. which was considerably delayed. A paratyphoid bacillus (S) gave a similar result in 0·1 per cent. and 0·5 per cent. but failed to grow in 1 per cent. urotropin broth. Bacillus pyocyaneus gave an abundant growth in all three strengths of the urotropin medium. Mr. Dudgeon stated that these experiments were being continued and that various modifications were being adopted.

Professor WRIGHT, in the absence of Dr. J. FREEMAN, gave the results of some observations on the Relationship of the Temperature to the Opsonic Curve in Acute Anthrax Infection. He said that rabbits had been inoculated with anthrax and the opsonic index and the temperature recorded every hour from the time of inoculation till the time of death. In estimating the opsonic index spores had been used instead of bacilli. In the first experiment it was found that the variation in temperature corresponded very closely to the variation in the opsonic index. In the second experiment the opsonic index corresponded with the temperature curve except during the last few hours of life when the opsonic index rose whilst the temperature fell. Professor Wright suggested that this variation might depend on the mode of death.

CLINICAL SOCIETY OF LONDON.

Transverse versus Inguinal Colotomy.—Torsion of the Omentum.

A MEETING of this society was held on Jan. 12th, Mr. H. H. CLUTTON, the President, being in the chair.

Mr. LAWRIE H. MCGAVIN read a paper on Transverse *versus* Inguinal Colotomy. He pointed out that the operations designed for the relief of ulceration and permanent obstruction of the large bowel left the patient and the surgeon nothing better than a "Hobson's choice." The feeling commonly expressed that death was preferable to colotomy had too long been permitted to retard the progress of surgery in this direction. On the other hand, colotomy had at one time been too readily resorted to. Much might be done in apparently hopeless cases by palliative treatment, and of such a case under his care a report was read. In those cases genuinely requiring colotomy the operator had the choice of three routes—viz., the lumbar, the iliac, and the transverse. In regard to the first, the greater difficulty of the operation, the inferiority of the spur, and the inconvenience of the position of the new anus were referred to. In the second method the frequency of the occurrence of prolapse and the difficulty, owing to the yielding nature of the abdomen, of applying sufficient pressure to control the motions were discussed. Transverse colotomy, to which little attention had been paid by surgeons, was, Mr. McGavin contended, a better operation since prolapse so seldom occurred; a good spur was always obtainable, a sphincter could be fashioned, the bowel could be more easily reconstituted at a later date if such was considered advisable, and the greater resistance of the subcostal space provided by the presence of the costal cartillages, the liver, and the rectus muscle, enabled such firm pressure to be applied by means of a belt (in this position more easily fitted) that the escape of fæcal matter was under perfect control. The supposition that the greater fluidity of the contents of the transverse colon was a contra-indication to this operation was denied, as was also the idea commonly held that the subcostal space was a more unpleasant site for the new anus. Mr. McGavin read the notes of three cases under his care in support of his contentions and advocated a more extended application of the operation, especially in cases in which the prospect of many years of life was still before the patient.—The PRESIDENT referred to the importance of the subject. He could not, however, agree as to the objections raised by Mr. McGavin against inguinal colotomy. The operation as done in modern times through the rectus muscle and with ther precautions did not lead to prolapse, even without the subsequent use of special apparatus. There were, of course, a few cases in which the transverse operation was indicated by the position of the intestinal disease.—Mr. HARRISON CRIPPS recalled the time when he brought forward his first series of four cases of inguinal colotomy at the Harveian Society of London. Lumbar colotomy, which had before that time been in vogue, was now entirely abandoned. Since that time he had performed many hundred operations and had come to the conclusion that there were three difficulties to be surmounted in connexion with colotomy. First, in regard to prolapse of the bowel, there was really very little liability to this complication now that inguinal colotomy was performed a little higher and no superfluous bowel was left above the orifice. Secondly, the difficulty of retaining fæcal matter was largely a question of the size of the opening; it was surprising what a large amount of control patients were able to acquire in course of years, and he mentioned a case which had been operated on nearly 20 years before. The third difficulty was the quantity of fœtid mucous discharge which collected in the bowel below the seat of operation. On all of these grounds inguinal colotomy was far superior, unless special reasons in the case indicated another position for the operation; but in his experience these latter were certainly rare.—Mr. T. H. OPENSHAW endorsed the views of the previous speaker in favour of inguinal colotomy. In certain cases, when, for instance, the stricture was at the splenic flexure of the colon, transverse colotomy might be useful.—Dr. W. H. B. BROOK (Lincoln) asked whether short-circuiting might not be useful in place of transverse colotomy in instances where the stricture was high up.—Mr. MCGAVIN, in reply, admitted the cogency of the remarks which had been made but urged a more extended trial for transverse colotomy.

Mr. H. IRVING PINCHES and Mr. EDRED M. CORNER communicated the notes of two further cases of Torsion of the Omentum. Reference was made to a previous paper by them.[1] The first case was that of a man, aged 48 years, who had had right inguinal hernia for 37 years; a truss had been worn for 33 years. The pain increased in severity and the tumour became larger. There was no vomiting and the bowels were opened two days after onset. On the third day the temperature was 99° F. and the pulse was 102. The tumour was extremely tender, soft and doughy to the touch, irreducible, and without impulse on coughing. The lower part of the abdomen and the inguinal region were extremely tender, and the skin was reddened over this area. The tissues felt thickened over the tumour, as if there was some inflammatory lesion present. Torsion of the omentum in the hernial sac was diagnosed and operation was performed. Over the inguinal canal the tissues were in a subacute inflammatory condition; the hernial sac was thickened. In the sac was a small mass of dark friable omentum twisted upon itself three times. The omentum was not nipped at the internal ring. The tumour was removed and the patient entirely recovered. The second case was that of a man, aged 45 years, who presented a very similar history and symptoms to the other case. At the operation the contained omentum was of about the size of a walnut and had a stalk. There was a hæmorrhagic cyst within it, yet it was not strangulated. Although a twist of the pedicle was not seen there was every physical and symptomatic reason to suggest its presence. This was the only example of possible torsion of the omentum in a direct inguinal hernia. Two more published cases were quoted, bringing the number of known cases of torsion of the omentum to 57. A brief analysis of these cases was submitted. Pain was the most constant of all symptoms. The tumour could in all cases be felt. The subject was always a man of middle age with long-standing hernia who was seized with symptoms of subacute obstruction.—The PRESIDENT commented on the torsion of various abdominal viscera. He took exception to the second case not being regarded as strangulated; if there was a hæmorrhagic cyst within the omentum this indicated strangulation.—Dr. F. W. FORBES-ROSS asked what was the practical bearing of the question whether torsion of the omentum did or did not exist in such cases as those brought forward.—Mr. W. G. SPENCER doubted whether the second of the two cases could be regarded as a case of torsion of the omentum and asked on what grounds the diagnosis had been arrived at. Mr. Corner and Mr. Pinches had said that torsion did not occur in femoral hernia, but Mr. Spencer believed he had

[1] Transactions of the Royal Medical and Chirurgical Society, 1905.

met with conditions very strongly resembling torsion in several cases.—Mr. PINCHES, in reply, stated the grounds upon which the diagnosis of the second case had been made.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 12th, Dr. J. Walker Downie, Vice-President, being in the chair.—Dr. G. B. Buchanan read notes on a fatal case of Acute Ascending Paraplegia occurring in a man aged 49 years, suffering from prostatic hypertrophy complicated with pyuria. Both kidneys were enlarged to about twice their natural size. When examined by the cystoscope the bladder was found to be deeply sacculated but apparently not inflamed, the prostate appearing as a projecting mass. The right ureter was gaping and discharged a flocculent fluid and the left was somewhat swollen and œdematous. The urine contained a little albumin and a deposit of pus; tubercle bacilli were searched for but not detected. The patient did not seem in any way disturbed by the examination, which was conducted without anæsthesia, but two days later he was a little sick in the morning and had a slight shivering fit in the afternoon, though by 6 P.M. he seemed well again. At 8 P.M. it was found that he could not move his feet or legs and by 11 P.M. the paralysis had spread to the hand so that he could only move it slightly. At this time the legs and the abdomen were completely paralysed and flaccid. The plantar reflex was normal but the knee-jerks were absolutely gone. Sensation to pain, touch, and locality was normal. At 12.30 A.M. the arms and hands became absolutely paralysed. The breathing became irregular, approaching the Cheyne-Stokes character, and the intercostal muscles were evidently paretic. At 1.15 A.M. the breathing became laboured and the patient died. The pupils were normal in size and reaction all the time; consciousness was perfect to the last, and no pain was felt anywhere. The temperature was subnormal throughout, except just before death when it reached 99 4° F. The question of etiology in this case was made more difficult by the impossibility of obtaining permission for a necropsy. It was suggested that the passage of an instrument in a patient who had recently been losing health with his urinary system already obviously diseased might have induced an increased absorption of poisons into the blood, leading to a profound intoxication of the cord without giving any precursory signs. Attention was drawn to an important paper read by Dr. T. J. Walker of Peterborough before the Clinical Society of London last year, in which he recorded three cases of fatal ascending paralysis occurring in the course of chronic cystitis and remarked that no writer previously had associated such cases with Landry's paralysis. "Urinary paraplegia" had been recognised by Stanley in 1833, and indeed by Troja as far back as 1780, and since that time had been the subject of much debate, especially as regarded its pathology. Dr. Walker on the basis of Leyden's deductions on "urinary paralysis," and Farquhar Buzzard's on Landry's paralysis concluded that his cases were due to myelitis from infection through the medium of the nerves supplying the bladder or kidneys. Charcot recognised three forms of "urinary paralysis": (1) due to myelitis; (2) due to purely reflex causes and transitory in character; and (3) due to lesions of the lumbar nerves, following direct infection from the urinary organs.—Dr. W. K. Hunter deprecated the use of the term "Landry's paralysis" for such conditions and preferred the expression acute ascending paralysis. He also gave some particulars of a case recently under his observation of a boy who died from this condition following sore-throat.—Dr. Leslie Buchanan read a paper on Injuries to the Eye of the Child during Labour. He said that such accidents generally occurred in cases of difficult labour, from rachitic deformity of the pelvis, where forceps were applied above the brim. The child's head was flattened laterally, the cavities and fossæ were compressed, and the eyes were pushed forwards. The eyes might be pressed against the promontory of the sacrum or might be injured by the forceps. The following lesions might occur: complete extrusion of the globe, fracture of the orbital plates with or without injury to the optic nerves, hæmorrhages into the retina, hæmorrhages into the anterior chamber from injury to the iris, and ecchymosis of the eyelids.—Dr. Thomson read a paper on Traumatic Keratitis of the Newly Born.—Dr. A. Lewis McMillan read notes of four cases of Intracapsular Cataract Extraction as recommended by Major Henry Smith, I.M.S., of Jallundhar, India. A large incision in the cornea was made to admit of free exit of the lens in its capsule, thus avoiding undue manipulation and also loss of vitreous. A good conjunctival flap was required to obtain rapid closure of the wound. This entailed carrying the incision well to the periphery of the anterior chamber and thus increased the tendency to prolapse of vitreous. In Case 1 the result was perfect. In Case 2 there was a subconjunctival prolapse of vitreous two days after the operation and the pupil was displaced upwards. In Case 3 the lens was caught in the wound and the operation was finished by the combined method as the safest procedure in the circumstances. In Case 4 there was an escape of vitreous and the combined method was then adopted. Dr. McMillan concluded that the combined method was safest in ordinary cases, though in selected cases Major Smith's method might give good results.

EDINBURGH OBSTETRICAL SOCIETY.—A meeting of this society was held on Jan. 10th, Dr. J. W. Ballantyne, the President, being in the chair.—A paper on a case of Eclampsia followed by Puerperal Melancholia which was treated by thyroid substance by Dr. W. E. Fothergill, was communicated by the Secretary. The patient was a primipara, aged 44 years, who was seen a few days before her expected confinement. The urine contained a trace of albumin and was otherwise normal in quantity and constitution. There was slight œdema of the hands and feet. The general health had been good. Constipation had been corrected by aperients. The patient had been married for three years. The personal and family history had no features of interest. The œdema disappeared and the urine became free from albumin in a week, the only treatment being attention to the bowels and restriction to light and vegetarian diet. Labour progressed satisfactorily until the head was on to the perineum, when the patient had a violent eclamptic seizure which passed off after three minutes leaving her semi-conscious. She was anæsthetised, forceps were applied, and the child was delivered after lateral incisions of the perineum. The child required one and a half hours' attention and treatment before the respiration was satisfactorily established. As the mother had a full, hard pulse partial separation of the placenta was carried out and bleeding to the extent of 15 ounces was allowed to take place when the placenta was fully separated. On the next day her pulse was full and hard and 16 hours after her labour she had another most severe convulsion. As she seemed to be in imminent danger of death Dr. Fothergill, who happened to be present at the time, opened a vein with his penknife and drew off 18 ounces of blood. The patient was given a wet pack. Six hours afterwards she could only be roused with difficulty and had stertorous breathing with a hard, full, and slow pulse, so bleeding was again carried out to the extent of 15 ounces. Milk diet was given and the bowels were relieved by lavage. The patient improved and the albumin, which had occurred subsequently to the convulsion, rapidly disappeared. She suffered from headache and on the fifteenth day her temperature rose and on the sixteenth day signs of melancholia appeared, with muttering speech and refusal of food. The pulse was very slow, at times down to 46. The condition passed into one of stupor. Thyroid substance, five grains thrice daily, was administered and gradual improvement took place. It was given because it had been found invaluable in the pre-eclamptic state; and Dr. Fothergill believed, and had taught since 1900, that the poison was the same, or nearly the same, in eclampsia, in the melancholia and mania, in the amblyopia, and in the polyneuritis of pregnant and puerperal women.—The paper was discussed by Dr. James Ritchie, Dr. H. O. Nicholson, Dr. D. B. Hart, Dr. G. Keppie Paterson, Dr. A. H. F. Barbour, Dr. S. MacVie, Dr. W. Fordyce, Dr. F. Porter, and the President.—Dr. G. F. Barbour Simpson read a paper on the Use of the Stereoscope in the Teaching of Obstetrics and Gynæcology. The advantages of the stereoscope in giving depth to the parts photographed were shown by specimens of mal-formed pelves, tumours, and other subjects. Reference was made to the assistance that it would give in teaching students the successive stages of abdomino-pelvic and perineal operations which it was difficult to do with flat diagrams.—Dr. Porter read a paper on Pyuria in the Female. It was based on examination of 300 specimens of urine, some of which were obtained by catheter. In as many cases as possible Dr. Porter directed his patients to wash the parts with mercuric perchloride lotion, discarding the first urine passed. The tests for pus were numerous; when large quantities were present, caustic potash, guaiacum, &c., were good

but for small quantities examination by the microscope was necessary. It was best to make a film by placing a drop of urine on a cover-glass, to allow it to dry in the air or by heating over a spirit lamp, to fix the film by passing it two or three times rapidly through the flame, and to add a drop of iodine mixture—the same as was used for testing the glycogenic reaction of the blood. Pus cells appeared reddish brown and other cells appeared lemon yellow; a ½ inch lens was all that was necessary. He found pus cells in one out of four of the specimens examined. The bacilli found were the bacillus coli communis, also gonococci, staphylococci, pseudo-diphtheritic bacilli, and numerous rod-shaped bacilli. He considered that pyuria in its mildest form should be looked upon as a septic condition and that leucorrhœa should be regarded as a common and probable source of this condition. He thought that it was advisable to examine the urine of all pregnant women as carefully for pus as for albumin. The presence of the colon bacillus in so many septic urines and vaginal discharges showed that the anus was almost certainly the source of the infection, so that a careful anal toilet in women was necessary.—The paper was discussed by the President, Dr. Hart, and Dr. Ritchie.—Dr. Porter replied.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.—A meeting of this society was held on Jan. 5th, Dr. R. H. Woods (Dublin), the President, being in the chair.—The following cases and specimens were shown:—Dr. Frederick Spicer: Disease of the Septum for Diagnosis; also a case of Congenital Malformation of the Soft Palate.—Dr. W. H. Kelson: A case in which the patient had suffered from Suppurative Disease of the Middle Ear and Post-nasal Catarrh for four years and had had small-pox, but there was no evidence of syphilis. On examination of the nose there was seen to be a circular ulcer on the right side of the septum; it was of about the size of a threepenny-bit and situated an inch from the inner margin of the vestibule and a quarter of an inch from the floor of the nose.—Dr. Andrew Wylie: A case of Excision of Rodent Ulcer on the Nose.—Dr. H. Buckland Jones: Paralysis of the Larynx and the Soft Palate. The condition came on suddenly six months ago with a difficulty in swallowing and regurgitation of food through the nose; these symptoms disappeared in about six weeks; she had also a difficulty in speaking which to a certain extent persisted. There was no history of diphtheria or of syphilis. The patient had been under anti-syphilitic treatment for the last two months and was distinctly better.—Dr. Peter H. Abercrombie: A case of New Growth in the region of the Right Tonsil and Anterior Faucial Pillar in a man; also a case of New Growth in the Naso-Pharynx of a man, aged 26 years.—Dr. Dan McKenzie showed an Auricle removed for Epithelioma of the Posterior Surface and Dr. V. H. Wyatt Wingrave the following microscopic specimens with notes: (1) Angeio-myxoma from the Floor of the Nose; (2) Angeioma of the Larynx; and (3) Rodent Ulcer of the Nose.—The President then read a short paper in which he advised surgeons to give the Dental Saliva Ejector a trial. He himself had now used it for seven years with every satisfaction as a means of removing blood and mucus during operations. It was useful in cases of operation within the nose and in the naso pharynx, especially so in operations for cleft palate. He had been told that the instrument was of great value in the treatment of wounds after operation, especially in bladder cases. The ejector could be coupled to an ordinary cold-water tap over a sink by means of the adapter used for attaching the garden hose.

DERMATOLOGICAL SOCIETY OF LONDON.—A meeting of this society was held on Jan. 10th, Dr. James Galloway being in the chair.—Dr. H. Radcliffe Crocker showed a case for Diagnosis. The patient was a man, an Australian, aged 59 years, and had always enjoyed robust health. The eruption had appeared four years ago as a nearly generalised dermatitis which had been diagnosed as eczema. Many forms of treatment had been essayed and the skin had been entirely cleared of eruption at least three times but it had always recurred. When shown the patient was suffering from a very severe attack. The trunk over the back and front was of a deep scarlet colour; the limbs and face were less red and with a moderate degree of fine desquamation. The eruption was everywhere quite dry, although he complained of very profuse and repeated sweatings. Itching had been a marked feature in the earlier history but the present sensations were those of burning and smarting. The skin was thickened in some parts, notably on the chest and back, but in other parts it was not at all thickened. Close examination revealed the presence of minute papules like those of lichen planus, even on the surfaces where the eruption appeared as uniform red patches. Dr. Crocker was of the opinion that the case was probably an instance of parakeratosis or lichen variegatus and the majority of members agreed with this diagnosis.—Mr. Malcolm A. Morris showed a case of Lymphangioma Circumscriptum in a man in whom the disease had begun at the age of 17 years. Over the external surface of the right thigh and buttock there were the typical grouped deep-seated vesicles. It was interesting to note that the eruption had disappeared after an attack of lymphangitis following a feverish disease like influenza. The patient had also had a patch of hypertrophied lichen planus which had been entirely dispersed by x ray treatment.—Dr. Galloway showed a man with a Circinate Eruption on the Wrist, Palm, and Dorsum of the Right Hand and on the Right Forearm. The man had had syphilis 23 years ago and Dr. J. J. Pringle, who was present, recognised him as a patient who had been under his care for syphilis ten years ago. The circinate lesions for which he was shown had made their appearance two months ago. It was generally agreed that these were due to lichen planus and were unconnected with the previous attack of syphilis. There were no lesions on the mucosa.—Dr. E. G. Graham Little showed a woman, aged 34 years, who had two patches of about the size of a sixpence on the inner side of the right knee which had persisted for seven months. These patches were itchy, a little raised and reddish-blue in colour, and the diagnosis of lichen planus was offered in explanation of them. But in the mouth there were some small buff-coloured deep-seated deposits which were shown by Dr. Little as an example of the disease of the mucosa of the mouth described by Fordyce. The case had been brought up to elicit opinions as to whether these lesions of the mouth could be ascribed to lichen planus which was admittedly present on the leg. It was the general opinion that the mouths lesions were not due to lichen planus and several member agreed that it was probably thesame condition as had been described by Fordyce.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.—A meeting of this society was held on Jan. 8th, Professor R. Muir, the President, being in the chair.—Dr. J. Kerr Love gave a demonstration of the methods employed to show the existence of residual hearing in the deaf and dumb. He explained the methods adopted in teaching the pupils—(1) the oral method; (2) the manual method; and (3) the oro-acoustic method—and referred to the necessity of good eyesight, good intelligence, and to the effect of the presence of hearing in the acquisition of speech. The materials which the teacher had to deal with were those of the congenitally deaf and the acquired deaf, and the objects of the teacher were to restore the deaf child to intercourse with the largest number of his fellows and to enable him to interpret the largest number of ideas. The clinical study of the material showed that in 25 per cent. of the children valuable residual hearing was present. The bell, whistles, tuning-forks, and Galton's whistle were used in testing the children and seven illustrative cases were shown to the society.—Dr. Alexander Napier showed: 1. A case of Lupus Verrucosus which was being treated by curettage and injections of tuberculin. 2. A case of Transposition of the Viscera. The patient, a married woman, aged 26 years, was admitted to hospital suffering from acute rheumatism and on physical examination the liver was found to be entirely on the left side and the spleen and heart on the right side of the body.—Dr. James Laurie described a case of Suprapubic Prostatectomy. The patient was a man, aged 77 years, whose bladder symptoms dated for about seven months and in whom a large sarcomatous growth, weighing 2 pounds 6 ounces, was present. The tumour was successfully removed and the patient had made satisfactory progress. The specimen and microscopical preparations were shown by the President.—Dr. J. S. McKendrick read notes of a case of marked Paroxysmal Dyspnœa occurring in a patient with double aortic disease and wherein after death were disclosed striking appearances of chronic mediastinitis. The patient, a man, aged 65 years, for several months before his death suffered from severe paroxysms of dyspnœa of a pseudo-anginous character. The cardiac dulness was increased and a mitral systolic and double aortic murmurs were present. There was a general atheromatous condition of the

vessels and the urine showed evidence of chronic Bright's disease. The attacks of dyspnœa became more frequent towards the end of the illness and symptoms of failing heart ensued. The post-mortem examination showed complete obliteration of the pericardium, hypertrophy of the heart with dilatation of the mitral valve, atheroma of aortic cartains with stenosis of the valve, and a dilated atheromatous aorta. The right lung was adherent and in the right axillary region there was a large thick fibro-cartilaginous and calcareous mass in the pleura, while at this site a similar nodule of the size of a marble was imbedded in the surface of the lung. The lungs were œdematous and the abdominal organs showed chronic passive hyperæmia, and the kidneys, in addition, an advanced chronic interstitial nephritis.

HUNTERIAN SOCIETY.—A pathological meeting of this society was held on Jan. 10th, Dr. Frederick J. Smith, the President, being in the chair.—Dr. J. P. Zum Busch showed a Dermoid of about the size of a cherry, adherent to the tip of a vermiform appendix removed on account of pain four months after a double oöphorectomy. The dermoid contained fat, hair, and bone. Dr. Zum Busch asked for opinions as to the origin of the dermoid.—Dr. H. Russell Andrews thought the presence of other than epiblastic structures—e.g., bone—proved that the dermoid must have had some connexion with the ovary.—Dr. Richard Warren agreed with this opinion.—A short discussion followed, in which the President and Dr. Zum Busch and Dr. Andrews took part, on the etiology of thrombosis after abdominal operations.—Dr. Andrews showed a large Hydrosalpinx removed with a Uterus affected with Carcinoma of the Cervix spreading into the Vagina. Abdominal hysterectomy was performed with removal of the upper third of the vagina. In answer to questions, he said that he thought Wertheim's method was a good one in cases of advanced carcinoma of the cervix but unnecessarily severe in early cases.—Dr. Andrews also showed a specimen of Tubal Abortion, a mole lying half in and half out of the abdominal ostium. He preferred abdominal section to vaginal operation for tubal pregnancy, chiefly on account of the difficulty met with occasionally in dealing with fresh hæmorrhage occurring during operation by the vaginal route.—Mr. W. A. Milligan showed a photograph and drawing of a specimen of Tubal Abortion.—Dr. Lewis A. Smith showed a Hydatid Cyst of the Liver which had perforated the diaphragm and formed a large cavity in the right lung which opened into the right bronchus. The diagnosis was made during life by finding hooklets in the sputum. A favourite collie had shared the patient's rooms for many years. Dr. Smith dwelt on the important part played by dogs and watercress in hydatid disease in England.

SOUTH-WEST LONDON MEDICAL SOCIETY.—A meeting of this society was held at the Bolingbroke Hospital on Jan. 10th, Dr. M. Mackintosh, the President, being in the chair.—Dr. G. F. Still delivered a paper on Pyrexia of Obscure Causation in Children. He first referred to the nervous instability of children, a condition which affected not only the temperature but also the cardiac and respiratory rhythm, the renal function, and in fact every function in the body. Cases of recurrent bouts of pyrexia were demonstrated by temperature charts where there appeared to be no obvious cause. These cases were probably of nerve origin. They were unaffected by treatment and in the long run got quite well. The relation of diet to pyrexia, especially with regard to carbohydrate food, was discussed, as was also fever due to bowel conditions and gland tuberculosis in mediastinum and mesentery. The throat and ear as sources of pyrexia in childhood were referred to and it was stated that otitis media might sometimes be present without diagnosis being possible. Dentition as a cause of fever was dilated upon and the lecturer concluded by urging the importance of examining the urine, acute pyelitis being sometimes an overlooked cause of fever in infancy.

LARYNGOLOGICAL SOCIETY OF LONDON.—The annual meeting of this society was held on Jan. 12th, Mr. Charters J. Symonds, the President, being in the chair. The following were elected as officers and members of council for 1906: President, Mr. Charters Symonds; vice-presidents, Dr. F. Willcocks, Dr. J. B. Ball, Dr. G. William Hill, and Dr. P. Watson Williams; honorary treasurer, Mr. H. Betham Robinson; honorary librarian, Dr. StClair Thomson; honorary secretaries, Dr. H. J. Davis and Dr. W. Jobson Horne; members of council, Sir Felix Semon, Mr. Philip R. W. de Santi, Dr. J. Middlemass Hunt, Mr. S. Paget, and Dr. Atwood Thorne.—At the ordinary meeting held subsequently the following communications were made. Dr. W. H. Kelson exhibited a case of Sinus of the Chin and also one of Ulceration of the Left Vocal Cord of an obscure nature occurring in a man, aged 28 years.—Sir Felix Semon exhibited a patient, aged 74 years, in whom a Tracheal Cannula had been permanently worn for 27 years for incomplete bilateral paralysis of the post-crico-arytenoid muscles which remained unchanged all that time.—Dr. J. Dundas Grant exhibited a case of extensive Ulceration of the Pharynx of a syphilitic nature, and also skiagrams illustrating the treatment of frontal sinus suppuration by irrigation.—Dr. J. B. Ball exhibited a case of Ulceration of the Pharynx and Larynx of an epitheliomatous nature, the points of interest being the very early involvement of the glands and the appearance of an ulcerating mass behind the tonsil, the disease having originated in the larynx.—Dr. E. A. Peters showed a specimen of a Tumour attached to the base of the sphenoid, which presented under the microscope the structure of a fibro-angeioma.

Reviews and Notices of Books

The Theory and Practice of Medicine. By FREDERICK T. ROBERTS, M.D., B.Sc. Lond., F.R.C.P. Lond., Fellow of University College; Emeritus Professor of Medicine and Clinical Medicine at University College; Consulting Physician to University College Hospital and to Brompton Hospital for Consumption and Diseases of the Chest. In two volumes. Tenth edition. London: H. K. Lewis. 1905. Pp. 1363. Price 26*s.*

IN commenting on the tenth edition of this well-known text-book on medicine the reviewer has a lighter task than when considering a completely new publication. The general scope and nature of the work are so well known that no words in explanation are necessary. A considerable interval has elapsed since the publication of the ninth edition and during the intervening period a large amount of valuable work has been accomplished in various fields of pathology and of scientific and practical medicine. Dr. Roberts, therefore, had a large amount of material to select from and the selection of those matters which should find a place in a manual on medicine must have been a labour of much difficulty. He may be congratulated sincerely on the success of his efforts. The text-book has been thoroughly revised and brought up to modern necessities. It is thus something more than a "new edition" that now lies before us, for a considerable portion of the book has been rewritten and some important changes in plan and arrangement have been made. Dr. Roberts remarks in the preface that this edition embodies his own personal experiences and opinions in relation to a large number of subjects which he has had special opportunities of studying. This element in a medical work always renders it more valuable and interesting than when the treatise simply reflects the accumulated work of other observers without being stamped by the personality of its author. The text-book now appears in two volumes instead of in one, and the plan has been adopted of duplicating the index so that it appears at the end of each of the volumes; this is a great advantage for purposes of reference.

The remarks on contagion and infection have been completely remodelled. This was rendered necessary by the great advances that have been made in bacteriology since the ninth edition was written. The nature and action of toxins so far as they are known are fully considered. The subject of immunity also is dealt with in a manner especially adapted for those just entering on the study of medicine. Opsonins escape attention but this omission may be pardoned considering the rather indefinite state of the knowledge that now exists in regard to them.

The section on malaria has been entirely rewritten in accordance with the advances which have been achieved owing to the investigations in regard to the etiology of the disease during recent years. The malarial parasites are fully described and Dr. H. R. D. Spitta's illustrations add to the value of the letterpress. Dr. Roberts fully accepts the view that malarial infection is conveyed mainly by mosquitoes, although he states that some authorities still believe that the pathogenic organisms may enter the system through the atmosphere or in drinking water. In considering yellow fever Dr. Roberts comes to the conclusion that the bacteriology is by no means yet positively determined. Although several observers have claimed the discovery of the specific organism of this disease, no protozoa have thus far been detected which can in any way be regarded as the cause of the malady. The experiments made by the American commission are duly referred to, which appear to have demonstrated conclusively that yellow fever may be conveyed by a mosquito—culex fasciatus.

Many alterations have also been made in this edition in the section devoted to acute and subacute rheumatism. It is quite properly pointed out that the terms "rheumatism" and "rheumatic" are still employed very vaguely. Modern observations and investigations have shown that many arthritic affections commonly regarded as rheumatic are of an entirely different nature (quite apart from gout and rheumatoid arthritis) and that they are produced by various micro-organisms. Gonorrhœal synovitis is aptly quoted as a prominent example of such affections and other forms are mentioned, such as the arthritis associated with the pneumococcus, with pyæmic and septicæmic conditions, and with typhoid fever, scarlet fever, measles, influenza, dysentery, and other infective diseases.

Dr. Roberts still retains acute croupous pneumonia amongst diseases of the lung. He admits that it is now generally classed as an acute specific fever, resulting from a specific micro-organism, of which the pulmonary inflammation is merely a local manifestation. He considers, however, that the bacteriology of pneumonia is by no means a settled question and believes that the inflammatory condition may be due to different microbes, acting separately or in combination.

The various systemic diseases are admirably described, but we have not space to draw attention to the numerous alterations and additions which have been made throughout the work. Dr. Roberts may be once more congratulated on being the author of one of the best text-books on medicine and on having prepared a new edition, brought fully up to date, entirely by his own efforts and without any extraneous help.

A Handbook of Clinical Cystoscopy. By E. HURRY FENWICK, F.R.C.S. Eng., Surgeon to, and Lecturer on Clinical Surgery at, the London Hospital. London: J. and A. Churchill. 1904. Pp. 560. Price 18*s.* net.

Mr. Hurry Fenwick has done much to advance the visual examination of the bladder and therefore a work from his pen on this subject should be valuable. In his preface Mr. Fenwick tells us that this book represents entirely the result of his own work and that he has intentionally avoided studying the literature of clinical cystoscopy, because he has wished to avoid unconscious plagiarism and bias. There is certainly something to say for this method, for writers on any subject are very prone to adopt, often without independent inquiry, the opinions of others who may themselves have borrowed them from previous writers.

A history of the visual examination of the living bladder is given from the first unsuccessful attempts of 100 years ago. Many forms of apparatus were made, but it was not till 1879 that Dr. Max Nitze introduced the electric cystoscope. This was an instrument of great practical utility, though it has been far surpassed by later patterns. The technique of the most modern forms of cystoscopy is clearly described and its dangers are mentioned. Burning of the mucous membrane is best avoided by not allowing the cap to be kept in contact with the vesical wall. In answer to the question—Does cystoscopy ever lead to a fatal result?—the author answers, Yes. The risk is especially great if the bladder has been washed out in a case of a patient with residual urine and deteriorated kidneys, but the author holds that anxiety need not be felt if the cystoscope is used in the patient's own urine. Mr. Fenwick lays great stress on the difficulties in interpreting the appearances seen by the cystoscope and maintains that accuracy in this respect can only be attained by experience and in this we agree with him. The various morbid conditions of the bladder are mentioned and their cystoscopic appearances described, and here we may speak of the many plates, coloured and uncoloured, which illustrate the text. Some of these have been made from drawings of what has been seen with the cystoscope and some have been drawn from clay and wax models made by the author as he examined the bladder.

We have nothing but praise for this book; its preparation has been careful and the general arrangement of the work is all that can be desired. For all workers in this department of surgery the perusal of the book should be of benefit, for in it will be found the solutions of many difficulties likely to be encountered in cystoscopy.

Handbuch der Tropenkrankheiten. (*Handbook of Tropical Diseases.*) With Contributions by Professor Dr. A. BAELZ, Fleet-Surgeon P. W. BASSETT-SMITH, Dr. P. VAN BIERS, Dr. C. L. VAN DER BURG, Professor Dr. A. CALMETTE, Dr. J. CARROLL, Dr. A. EYSELL, Dr. KRAUSE, Major W. B. LEISHMAN, Professor Dr. A. LOOSS, Dr. MAX LÜHE, Dr. W. G. MACCALLUM, Dr. L. MARTIN, Dr. K. MUIRA Dr. A. PLEHN, Dr. R. POCH, Dr. F. RHO, Dr. R. RUGE, Professor Dr. TH. RUMPF, Dr. L. SANDER, Dr. A. VAN DER SCHEER, Dr. K. SCHILLING, Professor Dr. G. STIEKER, and Dr. H. ZIEMANN. Edited by Dr. CARL MEUSE. Second Volume. Leipsic: J. A. Barth. 1905. Pp. 472.

WE welcome the appearance of the second volume of this great work on tropical diseases, the first volume of which we reviewed some months ago. This latter gave great promise concerning the future volumes and our appetite has not been whetted in vain. Dr. Carl Meuse has been fortunate in obtaining as collaborators in his undertaking such well-known men as Professor A. Calmette, Professor A. Plehn, Professor A. Looss, and Dr. R. Ruge, to mention only a few, whilst we are glad to see the English-speaking race is represented by Fleet-Surgeon P. W. Bassett-Smith, Dr. J. Carroll, Major W. B. Leishman, R.A.M.C., and Dr. W. G. MacCallum.

The volume opens with the subject of Tropical Aphthæ by Dr. Scheer. Here we find an admirable account of sprue and hill diarrhœa. The individual symptoms of sprue are minutely described—namely, those occurring in the mouth, the œsophagus, the stomach and the intestine, the liver, the heart, and the lungs. In the important section on treatment the benefits derived from an absolute milk diet are first set forth but sufficient stress is not laid on Cantlie's method of giving the patient raw meat juice from the commencement and then proceeding to a diet of finely minced and lightly cooked beef, whereby he hopes to restore the liver to its normal state. We also fail to find any mention of the influence of mica in the drinking water in the causation of hill diarrhœa, as so ably brought forward by Major H. Dyson, I.M.S. Dr. A. Eysell next deals with the life-history and anatomy of the anopheles and the culex and gives an excellent table of the differences between these two insects; this chapter is illustrated by some well-executed diagrams and is most complete in its survey. We next pass

on to the subject of Dengue, treated by Dr. C. L. Burg, and here we may draw attention especially to the apposite remarks on the diagnosis of this disease, although the author does not include relapsing fever amongst the diseases to be differentiated; surely the resemblances thereto are much more similar than to acrodynia, which is one of the affections mentioned in this respect.

Yellow Fever is treated of by Dr. J. Carroll of Washington. In his account of its etiology mention is made of the fact that Dr. Carlos J. Finlay first in 1883 drew attention to the rôle played by the mosquito in propagating the disease. This chapter embraces all that is known at the present time concerning the affection. The account of the symptoms, the diagnosis, the prophylaxis, and the actual treatment to be pursued is excellent. A very erudite chapter on Beri-beri follows by Professor Baelz and Professor Kinnosuke Muira. Its geographical distribution and its pathological anatomy are first given; then follows a well-reasoned section on its etiology and the many theories concerning this, but it should be noted that the theory of Dr. Hamilton Wright is not alluded to. This essay is enriched by some beautiful plates representing the disease. Leprosy is treated of by Dr. Georg Stieker and is also illustrated by some excellent plates. In its etiology the fish theory of its causation receives but scanty notice.

Bacillary Dysentery is dealt with by Dr. Ruge. The organisms that have been held to play a part in the causation of the disease receive due attention: the various modes of propagation by infection by contact, through water, by soil, and by flies and dust are then passed under review. Next there is an account of the clinical symptoms, complications, and sequelæ, amongst which the most frequent are held to be the joint affections, and lastly, we come to the treatment. Here we note that the method so ably advocated by Buchanan in India receives full notice. The author has, however, omitted to draw attention to the excellent work by the late Dr. Charles H. Ralfe on the treatment of the disease in its chronic form, a treatment that was found so successful some years ago at the Seamen's Hospital, Greenwich. Succeeding the chapter on dysentery is that on cholera Asiatica by Dr. P. Krause and Dr. T. Rumpf. In describing the etiology of the affection the authors wisely do not waste any space on the climatic theory of its causation that was for so long a period the bugbear of officers of the Indian Medical Service. The cholera vibrio of Koch found by him in India in 1883 is well described as regards its morphology and biology, then follow the experimental induction in animals and the accidental infection of students working at the disease in German laboratories, and lastly the differential diagnosis is well given. The authors, however, fail to give any satisfactory explanation of cholera collapse; the late Sir George Johnson's theory of its causation is not mentioned. In the treatment we are sorry to see that stress is first laid on the employment of opium. Subsequently that by castor oil is mentioned but the credit of this is given to Dr. Jules Guérin. Surely this belongs to Sir George Johnson. No mention is made of the treatment by oil of eucalyptus introduced by Major E. Harold Brown, I.M.S., for which good results are claimed.

Mediterranean or Malta Fever is ably discussed by Fleet-Surgeon P. W. Bassett-Smith of Haslar, and succeeding this article we find one on Enteric Fever in the Tropics by Dr. L. Martin. The various factors in its spread are noted, such as by water, by dust, by flies, and by eating raw vegetables such as the leaves of lettuce. As regards the "natural immunity" of the coloured races latter-day observations are correctly considered to disprove this so-called fact. Some excellent charts show how different they are from the classical manifestations of temperature in temperate climates. In the treatment recommended no mention is made of Simon's method by oil of turpentine. Plague is dealt with by Dr. Rudolf Poch of Vienna. The rôle played by rats is insisted on as regards its propagation. The volume closes with a description by Dr. A. Plehn of Berlin of the acute exanthemata, including verruca Peruviana, small-pox, measles, and scarlet fever.

The second volume well maintains the standard set by the first and the work, which is enriched by very full references to the literature of the various diseases, promises to form an exhaustive treatise on tropical diseases. We await with interest the publication of the third and completing volume.

LIBRARY TABLE.

Atlas and Epitome of Diseases of the Skin. By Dr. FRANZ MRACEK, Professor of Dermatology in the University of Vienna. Authorised translation from the German. Second edition, revised and enlarged. Edited by HENRY W. STELWAGON, M.D., Ph.D., Professor of Dermatology, Jefferson Medical College, Philadelphia, &c. With 77 coloured plates and 50 half-tone illustrations. London and Philadelphia: W. B. Saunders and Co. 1905. Pp. 273 and plates. Price 16*s.* net.—This is perhaps the best volume of this valuable series, for diseases of the skin lend themselves more readily to pictorial illustration than do diseases of any other portion of the body. We have on a previous occasion noticed the German original and this second edition has many additional plates. The English version has been edited by Dr. Stelwagon and that fact is sufficient to guarantee its accuracy, but the plates form the more important part of the book. These illustrations are for the most part excellent. In a few cases the names given would not satisfy English dermatologists—for instance, Ichthyosis serpentina; here the serpentina is absolutely useless. Still this is a small matter and we can commend the book heartily.

A First Reader in Health and Temperance. By W. TAYLOR. Illustrated. London: Church of England Temperance Society. Pp. 219.—This little book is intended to teach the young how they grow, how they get sick, and how they may keep their bodies healthy and strong. The instruction is given in the form of 43 lessons and at the end of each short chapter there is a summary. The text is bright and easy of comprehension and the subject-matter is well arranged. The book is nicely illustrated and any boy or girl who uses the reader will derive both pleasure and useful knowledge. The tone of the little book is exceedingly good and it should prove a useful gift to children.

Practical Zoology. By the late Professor MILNES MARSHALL, F.R.S., and the late Dr. HERBERT HURST. Sixth edition by F. W. GAMBLE, D.Sc. London: Smith, Elder, and Co. 1905. Pp. xxxiv.-498. Price 10*s.* 6*d.*—The fact that this handbook has reached a sixth edition is a better testimony to its efficiency than could be furnished by any reviewer; and having got to this unusual length of life for a zoological text-book it is hardly necessary to say that it has been thoroughly purged of any errors which might have been originally present and which are, as the late Professor Milnes Marshall truly observed, so curiously hard to avoid. It was written at the first, and has been continually revised, by teachers having at their fingers' ends the limited number of facts required for the information of the elementary student of zoology. There is thus no scope for destructive criticism affecting the trustworthiness of the handbook. The principal novelty in the present edition is the introduction of two new types belonging to the sporozoa, which group is at present attracting so much attention in the zoological and in the medical world. The usefulness of the guide is hereby increased. In considering a book such as the present we

wonder why educational and examining bodies are "so careful of the type." On general grounds it would be so inconceivably better to change the types thoroughly and constantly and thus to prevent teachers and examiners getting into a groove which offers no advantages save to the producers of handbooks and to the examinees who have failed to satisfy the examiners.

JOURNALS AND MAGAZINES.

The Bristol Medico-Chirurgical Journal (December, 1905).—The Presidential Address delivered by Mr. John Ducre to the Bristol Medico-Chirurgical Society last October, entitled "The Family Doctor," contains much practical wisdom and may be commended especially to the study of those recently qualified; true it undoubtedly is that, whatever the advantages of the present system of teaching and examination, the newly fledged medical man finds himself at first less well equipped than his predecessors under the old system of pupilage to minister to the everyday ailments of patients. Dr. J. Michell Clarke writes on two cases of Myasthenia Gravis, in one of which great improvement took place under treatment with thyroid extract. The Long-Fox lecture by Dr. R. Shingleton Smith deals with the Pathology and Treatment of Graves's Disease, a subject to which much attention has recently been directed, and Mr. Charles A. Morton continues his Study of 155 Cases of Appendicitis.

The Scottish Medical and Surgical Journal (December, 1905).—In an inaugural lecture to the Forfarshire Medical Association Professor A. R. Simpson deals with the subject of Criminal Abortion, pointing out the widespread nature of the offence and trusting to educational rather than to judicial measures to eradicate it. Dr. A. H. F. Barbour records a case of Endothelioma of the Ovary, with illustrations of the naked-eye and microscopical characters of the growth; and Mr. John D. Malcolm contributes an abstract of his paper, read before the Royal Medical and Chirurgical Society, on Inflammation and Peritonitis considered as Physiological Processes. In a paper entitled "Gouttes de Lait" Dr. A. Dingwall Fordyce points out the importance of establishing in this country institutions for the supply of pure milk, suitably modified, for the use of the infants of the poorer classes.

The Medical Chronicle.—In the October number of this magazine is contained the concluding instalment of Dr. C. Paget Lapage's article upon Feeble-mindedness in Children, the whole constituting an important contribution to the subject dealt with; an extensive bibliography is appended. Dr. R. T. Williamson writes of Degeneration in the Posterior Columns of the Spinal Cord, which may be found in many other conditions besides locomotor ataxy with which it is generally associated. In the November number is contained a very interesting paper by Sir Thomas Myles upon Difficulty of Diagnosis in Diseases of the Bladder, in which stress is laid upon the value of the x rays in the diagnosis of vesical calculi which often escape detection by the sound, upon the difficulty of recognising malignant affections of the prostate, and upon the existence of a special syphilitic disease of the bladder accompanied by atony of the muscles of this viscus. The opening portion of an address by Professor W. Stirling on Coöperation and Adaptation in Digestion gives a historical account of much early work done by pioneers in physiology upon the alimentary tract.

The Quarterly Journal of Microscopical Science. Edited by E. RAY LANKESTER, F.R.S., with the coöperation of ADAM SEDGWICK, F.R.S., W. F. R. WELDON, F.R.S., and SYDNEY J. HICKSON, F.R.S. With lithographic plates and engravings on wood. London: J. and A. Churchill. No. 194. November, 1905. Price 10*s.* net.—This number contains the following memoirs:—1. Studies in Spicule Formation, by W. Woodland of University College, London, in three parts with seven plates. Mr. Woodland commences a systematic investigation of spicules in general, with an account in his first part of those of the sycones—a family of calcispongiæ—the members of which are common in the North Atlantic Ocean but are also abundant in the Indian and Pacific Oceans. He describes each simple monaxial spicule as originating from an isolated scleroblast which enlarges and divides forming a binucleated mass of protoplasm; the nuclei separate, and a pale streak is seen stretching from one to the other and it is in the interior of this mould that the spicule is first deposited as a minute refringent needle. The well-known tri-radiate spicules are formed by the association of three cells, each of which divides in the same way, so that in the formation of each spicule two cells are engaged. In the second part Mr. Woodland describes the spicule formation in alcyonium digitatum. In the third part he gives details of the mode of formation of the spicular skeleton in the pluteus of echinus esculentus. Excellent plates accompany the article. 2. The Digestive Organs of the Alcyonaria and their Relation to the Mesogloeal Cell Plexus, by Edith M. Pratt, D.Sc. Vict. This article contains a full account of these interesting octactinic anthozoa. It is illustrated by many figures on three plates. 3. A Contribution to the Morphology and Development of the Pectoral Skeleton of Teleosteans, by H. H. Swinnerton, D.Sc. This investigation was chiefly conducted on the salmon and the stickleback. The development of the pectoral skeleton in these two fishes appears to be fundamentally the same. 4 Observations on Hæmatozoa in Ceylon, by Aldo Castellani, M.D., and Arthur Willey, F.R.S., with a plate. Just as Schaudinn found that the halteridium of birds was only a phase in the life-history of species of trypanosoma, so the authors find an endoglobular parasite to which they have applied the term hæmocystidium, which is possibly only a phase in the life-history of some other organism, and they also describe some other hæmogregarinæ and filariæ. 5. The Gastrulation of the Vertebrates, by A. W. Hubrecht; and (6) the Gastrulation Question, by Franz Keibel These two articles are polemical but Hubrecht gives the following definition of gastrulation. It is, he says, a process during which an intestinal entoderm is differentiated as against an integumentary ectoderm and by which a monodermic blastos is changed into a didermic.

Reports and Analytical Records
FROM
THE LANCET LABORATORY.

PANCREOL.

(THOS STEPHENSON, 137, GEORGE-STREET, EDINBURGH.)

WE have examined this preparation with satisfactory results. It is a jelly containing pancreatised cod-liver oil, the oil amounting to about 50 per cent. Apart from reducing the oil to a digestible condition the method of preparation renders it also more palatable than when it is in the free state.

(1) BROMIDE OF MERCURY AND POTASSIUM; (2) LIQUID BROMIDE OF MERCURY SOAP; AND (3) KELVOLIN.

(HAY, STEVEN, AND CO., MARYHILL, NEAR GLASGOW.)

1. The double salt of bromide of mercury and potassium would appear to offer some advantages for disinfectant purposes as compared with the use of corrosive sublimate. In the first place the double salt is more soluble than the chloride. Then it is compatible with soap and also, as we have found, does not form a precipitate with albumin. The combination is stable and is a powerful germicide. 2. The

advantages just described are obviously available in the bromide of mercury liquid soap which contains 3 per cent. of each of mercuric and alkaline bromide. 3. Kelvolin is a clear brown alkaline fluid which mixes with water with the production of a slight opalescence only, whilst the addition of acid turns it into a milky fluid. It contains phenols but not carbolic acid with neutral tar products purified and an emulsifying medium. The presence of refined coal tar oils confers a high germicidal value upon the preparation. Kelvolin in the form of vapour and as a local application has been employed in cases of aural sepsis with, it is stated, very satisfactory and encouraging results.

PEPTO-FER.

(GUYOT-GUENIN AND SON, 67, SOUTHWARK BRIDGE-ROAD, LONDON, S.E.)

The basis of this preparation is chloro-peptonate of iron which is stated to be rapidly assimilable. We satisfied ourselves that the iron is present in this form, the amount, according to our analysis, being 0·7 gramme in 100 cubic centimetres. The taste of the preparation is unpleasant and very sweet from the presence of a large proportion of sugar. We cannot assign to "pepto-fer" any merit as regards iron greater than many well-known organic iron preparations.

NORWEGIAN COD-LIVER OIL.

(ALF. SPRING AND CO., LIMITED, WEST DOCK-STREET, HULL.)

The sample proved to be a clear straw-coloured oil and free from stale or rancid flavour. The oil was free also from acidity. On applying well-recognised tests for the presence of foreign oils negative results were obtained. The specific gravity of the oil was 0·923 at 60° F. On account of its purity the oil is evidently well adapted for medicinal use.

"MOUNTAIN" STERILISED MILK AND CREAM.

(THE VERBOVEC EXPORT DAIRY CO., VERBOVEC, HUNGARY. LONDON AGENCY: R. SIMPSON SHAW, 17, DEVONSHIRE-SQUARE, E.C.)

These excellent milk products come from Hungary. They all proved to be of good quality and the process of sterilisation adopted must be pronounced a success since we found that the milk differed little as regards its appearance, uniformity, and flavour from fresh raw milk. In particular, the fat has been preserved intact, no appreciable amount existing in the milk in a separated state. On analysis the milk gave the following results: total solids, 12·75 per cent.; comprising fat, 3·48 per cent.; proteid, 3·44 per cent.; milk sugar, 5·13 per cent.; and mineral matter, 0·70 per cent. We received also two specimens of sterilised cream, one marked "single" and the other "double." The "single" cream gave the following results on analysis: moisture, 65·96 per cent.; fat, 24·60 per cent.; mineral matter, 0·28 per cent.; and curd and sugar, 9·16 per cent. The quality of both samples of cream was excellent and the flavour quite good. The "double" cream, as its name implies, contains considerably more milk fat. In no instance were objectionable preservatives found and the products are what they pretend to be, genuine milk and cream, without addition or abstraction and satisfactorily sterilised.

"HUMANISED" CONDENSED MILK.

(THE HUMANISED CONDENSED MILK CO., LIMITED, 24, MINORIES, LONDON, E.C.)

For use it is directed that one part of this milk should be diluted with two parts of water. Complying with this direction we obtained a mixture which, as the following analysis shows, corresponds very closely as regards composition with human milk. The results were as follows: fat, 3·50 per cent.; proteid, 1·06 per cent.; milk sugar, 7·44 per cent.; and mineral matter, 0·20 per cent. The milk is thus not only not deficient in any single constituent but, and this is of equal importance, it does not contain an excess of any one of them. It is important to observe also that the milk salts are retained intact. The sample was in perfectly sound condition and showed the general characteristics when diluted of fresh human milk.

MAS-DE-LA-VILLE GRAPE JUICE.

(AGENTS: INGERSOLL AND MELLUISH, 6 AND 8, EASTCHEAP, LONDON, E.C.)

We examined the brand styled "Château Peyron." The juice had a pleasant flavour of the grape and was free from objectionable preservatives. It contained 16·85 per cent. of solid matter, the bulk of which was grape sugar. On distillation a small amount of alcohol was obtained, amounting to 1·69 per cent. by weight. A certain amount of fermentation had therefore set in and, as a matter of fact, on opening the bottle there was a slight pressure due to the escape of carbonic acid gas.

HONIELADE.

(THE HONIELADE CO., 46, 48, AND 50, BERMONDSEY-STREET, LONDON, S.E.)

The suggestion of mixing honey with marmalade does not appeal to us as a very satisfactory one, though we admit that each ingredient is of excellent quality. We may point out that honey is practically invert sugar, its attractiveness being due to its peculiar flavour depending upon the presence of small amounts of volatile substances derived from flowers. In this preparation the flavour of honey curiously enough predominates over that of the Seville orange. The idea, it seems to us, is akin to mixing sherry with port. The orange and honey are valued for their distinctive flavours and to mix these flavours seems to us to be utterly illogical.

WHITE VINOLIA HOUSEHOLD SOAP.

(THE VINOLIA CO., LIMITED, MALDEN CRESCENT, LONDON, N.W.

The important claim made in favour of this soap is that it is free from rosin. Our analytical observations enable us absolutely to endorse this claim. We searched most minutely for rosin but always with negative results. The soap is an excellent cleanser and is attractively white and clean in appearance.

ROYAL LANCER LIQUEUR.

(INNES SMITH AND CO., 83, HIGH-STREET, BIRMINGHAM.)

The ingredients of this liqueur are satisfactory but we think that its flavour is comparatively uninteresting, being chiefly derived from the orange. The liqueur contains 30 per cent. by weight of alcohol and rather less than that amount per cent. of sugar. The liqueur has the colour of pale sherry.

BRANDIMINTINE LIQUEUR.

(HALL AND GRAY, 16, WATER-LANE, GREAT TOWER-STREET, LONDON, E.C.)

We have examined this liqueur with the following results: alcohol, by weight 27·21 per cent., by volume 32·98 per cent., equal to proof spirit 57·80 per cent.; solid matter, chiefly sugar, 46·36 per cent.; and mineral matter, 0·50 per cent. It is stated that the liqueur is made with pure Cognac brandy, which in view of its palatable qualities we can well believe. The peppermint oil, of course, gives the liqueur the properties of a carminative, and coupled with the action of the brandy is calculated to increase the flow of the gastric secretion. The liqueur is coloured a delicate green.

New Inventions.

A NEW SPONGE OR WOOL HOLDER FOR DENTAL OPERATIONS.

THE accompanying illustration represents a double-ended sponge or wool holder designed by me for dental operations or other short operations on the mouth in which it is essential to be able to swab away blood as quickly as possible. The instrument is a modification of the existing single-ended

sponge holder and consists of a German-silver rod made in one piece and split for five and three-quarter inches at each end with a sliding catch to keep the wool or sponge

in situ. It is unbreakable, very quickly loaded, and easily sterilised.

It is made by Messrs. Allen and Hanburys, Limited, 48, Wigmore-street, London, W.

Queen Anne-street, W. CHARLES EDWARD WALLIS.

A NEW OPHTHALMIC DROP BOTTLE.

THE accompanying illustration represents a double safety sterilisable ophthalmic drop bottle which has been made for me by Messrs. Down Brothers, Limited, of 21, St. Thomas's-street, London, S.E. The bottle resembles a test-tube in shape and has a safety tube fused into the neck which prevents its contents from escaping; its construction allows of rapid sterilisation without the removal either of the india-rubber cap from the dropper or the latter from the bottle. The pipette or dropper is ground to fit the bottle accurately and a safety tube fused to the aperture of the upper bulb prevents any fluid that has been drawn up into the pipette from running back into the indiarubber nipple when the bottle is laid on its side or the pipette everted. The india-rubber nipple has near its centre a fine longitudinal slit. It occurred to me to utilise this ingenious device of

Bunsen, known as the Bunsen valve, in order to sterilise the interior of the indiarubber nipple of ophthalmic drop bottles. In order to sterilise the bottle it is held in a slanting position over the flame of a spirit lamp with the curved end of the pipette directed upwards until the contents boil. The pressure of the steam drives the fluid into the pipette until the curved end is free and the steam then passes up through the liquid in the pipette, on into the interior of the rubber cap, sterilising it, and escaping through the Bunsen valve. The valve prevents the admission of external air to the bottle after it has cooled, so that at the end of the process of sterilisation the bottle is entirely free from air and the atmospheric pressure prevents the pipette from coming out. The tube can be carried in this condition until its contents are required, when pressure on the top of the indiarubber cap opens the valve and the pipette can be removed with ease. The bottles are made up in sets of nine and are supplied in the following colours: blue (homatropin), green (methyl-atropin), ruby (eserin), amber (silver nitrate), yellow (pilocarpin), purple (atropin), light blue (dionin), light green (fluorescin), and flint glass (cocaine). The whole set, comprising nine bottles, a spirit bottle, and a small spirit lamp, is supplied in two leather cases, three and three-quarter inches square, which is easily carried in the pocket. Each case is provided with compartments for five bottles, the selection of which is left to the surgeon, but the most useful is one comprising cocaine, atropin, eserin, silver nitrate, spirit bottle, and lamp. As most of the fluids used are alkaloids these bottles are readily cleansed by means of a little strong nitric acid which forms a salt easily soluble in water. The deposit occurring in a solution of cocaine mixed with adrenalin is difficult to remove, but by allowing the acid to stand for some time in contact with it, with perhaps boiling it occasionally and washing well with water, it is possible to remove the greater part of it.

Bournemouth. JOHN BURDON-COOPER, M.D., B.S. Durh.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Jan. 19th, 1828.

We turn from Dr. BUTTER to a highly respectable but not very temperate antagonist of Mr. LAWRENCE—Mr. COOPER; and we do so, chiefly for the purpose of noticing a passage in his last letter, on which we promised to make some further observations. Mr. COOPER says, he is aware there are many members of the profession who would not only disdain to become writers for THE LANCET, but who decline to read its pages. Now, it is clear, from Mr. COOPER'S subsequent explanation, that he entertains the same opinion as ourselves as to the character of the individuals to whom he alludes. In fact, the ambiguity in this passage, arises partly from the use of the words "writers *for* a public journal," in a sense which they are not usually supposed to imply, and partly from the misapplication of the word "disdain," where he evidently meant only to ascribe to the individuals in question the affectation of scorn. Disdain can no more be said to enter the feelings of the Bats and Corruptionists who hate and fear THE LANCET, than it can be predicated of offenders who hate and dread the tribunal by which their conduct and character are investigated. Disdain implies a conviction of the weakness of an adversary; the Bats and Corruptionists hate and dread THE LANCET for its strength. Is it disdain which Mr. TRAVERS feels towards the instrument which has enabled the public to contrast *his* skill as a lithotomist with that of his colleague Mr. GREEN, who, out of forty cases of stone, which he has operated upon at St. Thomas's Hospital, has not lost a single patient? Mr. GREEN, like his colleague, did all he could to crush the rising freedom of the medical press; but if we hesitated on that account to acknowledge his decided superiority to his colleague, we should indeed deserve the scorn, which neither he nor any other member of the profession ever felt for the press when smarting under its severest animadversions. When Sir ASTLEY COOPER, in a silly speech at a public dinner, talked of the "reptile press," does any one believe that the worthy Baronet, whose extra-professional attainments are of the humblest description, really felt disdain for that mighty engine whose justly-administered praise had so often mantled his cheeks with pleasure, but whose salutary chastisement he bore with the petulance of a spoiled child? With respect to any imputations which may be cast on the character of our Journal, the best answer to them is the estimation in which THE LANCET is held by the profession and the public, and the declining state, we might almost say the annihilation, of our imbecile and corrupt contemporaries.[1]

[1] Excerpt from a leading article.

THE LANCET.

LONDON: SATURDAY, JANUARY 20, 1906

The Health of the Royal Navy.

THE changes consequent on the re-organisation of the Army Medical Service under the Warrant of 1902 were many and important and were followed by new regulations for the medical department of the Royal Navy. The object in common of these changes was twofold—namely, to extend greater advantages to the medical services concerned and to afford at the same time a better scope for the pursuit of scientific work. Sufficient time has not elapsed to show what has been the effect of these improvements in the naval medical service. Still, the publication of the statistical report of the health of the navy for the year 1904 (ordered to be printed by the House of Commons in August, 1905) has considerable interest at the present time in that it affords very satisfactory evidence of the health conditions of the navy, and as a natural inference of the efficiency of its medical service; while by the papers published in the appendix to that report we are able to gauge the nature, progress, and value of the scientific work which is being carried on by naval medical officers.

We learn from the report that the *personnel* as compared with the previous year was increased in 1904 by 7470, making up a total force serving afloat in that year of 110,570. There is an interesting table showing the men composing our naval force arranged according to age, from which we gather that in this respect the British is a comparatively young navy. Contrasted with 1903 the case and invaliding ratios show a reduction but the death ratio a fractional increase. We are told that in the present report a comparison with the average of the last seven years has been instituted and a yearly increment will be adopted in each future report until a period of ten years shall have been again attained. The ratio of cases per 1000 of force shows a reduction on all stations except the Pacific as compared with the average ratio for the last seven years. The invaliding ratio of the total force—viz., 22·7 per 1000—shows a decrease of 7·28; and as regards the death-rate the ratio per 1000 was 4·45, showing a decrease of 1·01 per 1000 when contrasted with the last seven years' ratio. The death-rate from disease alone was 3·14 per 1000. The highest invaliding and death rates were on the East Indies station. The figures, it will be observed, are on the whole very satisfactory—the larger number of men serving, their youth, and their improvement both as regards mortality rate and sickness rate being subjects of national congratulation.

With regard to the papers included in the appendix the unavoidable delay which must take place in the issue of official reports of a statistical nature may tend to weaken the interest that would otherwise be taken in articles of great professional and scientific value. We have been able to allude to some of the papers before, but to many of our readers these excellent contributions, describing bacteriological and other researches and investigations into the causes of disease undertaken and carried out with great scientific precision and labour, will come as complete novelties. It is evident that naval medical officers are ready to avail themselves of the increased means and opportunities of special and systematic research that have of late been introduced into their service and that many of them possess the necessary scientific qualifications for successfully turning these opportunities to the best account. We desire particularly to call attention to the special articles by Fleet-Surgeon P. W. BASSETT-SMITH on the etiology of Mediterranean fever, with particular reference to the growth and vitality of the micrococcus Melitensis outside the body, and to his further notes on the distribution of this fever in the fleet; and to those of Staff-Surgeon E. A. SHAW and Fleet-Surgeon D. J. P. MCNABB in connexion with the same subject but from different points of view—clinical, pathological, and therapeutical, as well as bacteriological. It may be mentioned that 333 cases of Mediterranean fever are recorded as having occurred in the Mediterranean fleet in 1904, a decrease of 6·74 per 1000 as compared with the average ratio of the last seven years. The invalidings from the same cause were 183 and there were eight deaths—a fractional increase on the ratio for the last seven years. The ships furnishing the largest number of cases were *Implacable* 25, *Egmont* 36, and *Leander* 23. The article on the year's laboratory work at the Royal Naval Hospital, Malta, by Staff-Surgeon R. T. GILMOUR; that by Fleet-Surgeon E. P. MOURILYAN on compressed air illness to which divers and men employed in caissons are liable, and its treatment by the inhalation of oxygen; and Fleet-Surgeon J. L. BARRINGTON'S paper also dealing with caisson disease are all of them distinctly interesting. Nor must we omit to notice the curious and interesting contribution to our knowledge of Ningpo varnish disease, by Surgeon P. HAMILTON BOYDEN. This is an affection of the skin caused by contact with structures which have been recently painted with Ningpo varnish, a composition used in the navy by officers who are ignorant of the secret nature of its manufacture and of its injurious effects. Such articles make the report a scientific document of really great interest.

The Epileptic Patient and the Lunacy Laws.

IN our issue of Jan. 13th we drew attention under the above heading to two recent cases in which an individual keeping a private home for invalids was prosecuted at the instance of the Commissioners in Lunacy for taking charge of an alleged lunatic for payment, contrary to the provisions of the Lunacy Act. These cases present points of interest to which we propose to refer in greater detail. Their salient features as reported in the public press are as follows. The first case was that of a lady of unstated age, presumably an adult, who, according to the testimony of her aunt, had suffered nearly all her life from fits, apparently epileptic in nature, and who

was received, as we gather, upon the recommendation of a medical man into the private home kept by the defendant about five years before the date of prosecution. The proceedings were instituted by the Commissioners in Lunacy upon the report of a medical man who examined the patient under an order from the Lord Chancellor and considered her to be of unsound mind. Three other medical men gave evidence, of whom two appear to have given some time previously certificates to the effect that this patient, amongst others in the house, was not in their opinion certifiable as insane, and all three were of opinion that she was still uncertifiable, though they allowed that her mind was enfeebled by epilepsy. An inquiry from the bench elicited from one of these medical men the admission that the patient was incapable of managing her pecuniary affairs. The magistrates were of opinion that at the time of the examination made under the official order the patient was of unsound mind within the meaning of the Act. The defendant was therefore convicted but as the evidence showed that the patient had been treated with kindness and care a small fine of 5*s.* and costs was imposed. In the second case the same individual was proceeded against before another bench of magistrates by the Commissioners in Lunacy for the same offence, the alleged lunatic in this instance being kept at another house. The patient was a youth, aged about 16 years, who, according to the testimony of his father, had been subject to fits nearly all his life. The medical man who visited him under the Lord Chancellor's order considered him to be of unsound mind and attributed his mental condition to the prolonged influence of epileptic fits. According to the defendant, the patient was "a good boy as a rule but would take money to buy sweets, toys, &c." He was allowed out in the village by himself. He was visited about once a month by a physician who sent patients to the house. The latter practitioner gave evidence and considered the case to be one of an "ordinary epileptic boy, certainly not certifiable." His opinion was that the condition in which the first-mentioned medical man found the patient was one of "epileptic stupor, certainly not certifiable insanity." He further described the lad as weak-minded but not of unsound mind. The magistrates did not think that there was sufficient evidence to convict and dismissed the case but disallowed costs.

From the above account it would appear that the only distinction between these cases was one relating to age and degree of mental debility. Both patients, there is no question, were feeble-minded; in both epilepsy, the damaging agent, started early in life; in neither could some degree of congenital defect be excluded. There seems to have been no essential difference between these cases and it would have been more logical to have regarded both or neither of them as within the scope of the Lunacy Act. The mental disturbances which epilepsy is capable of producing are so numerous and varied, its different mental phenomena so liable to transition from one phase to another, that any attempt to demarcate one kind of disorder from another upon a scientific basis, or even accurately to differentiate the so-called "sane" from the "insane" epileptic, is not feasible. The classification of epileptics for the purpose of care and treatment must be mainly empirical and based upon grounds of expediency. Thus, we might describe the epileptic who is sane except in immediate connexion with his seizures, whose case, at all events for a considerable time, is met by diet and drugs under private medical or hospital treatment; the epileptic who is more or less feeble in mind but comparatively docile and suitable for the industrial home and colony; and the epileptic who requires to be certified under the Lunacy Act because he is liable to be violent and dangerous, or is deeply degraded, or is an intractable imbecile. In the last class would be placed the asylum cases who are therefore called "insane" epileptics; but the distinction between this and the other classes is an artificial one and based upon grounds of expediency. In the two cases referred to above mental debility was recognised by the persons responsible for placing the patients in the homes to be sufficiently pronounced to render it desirable that they should be under care, and care of such a kind as would curtail their liberty of action. The adoption of this course amounted to an admission that these patients were unfit to control themselves or their affairs. In the first case it was elicited on cross-examination of the patient's aunt that the patient was in possession of a small income which she was not allowed to control. One of the medical witnesses who did not consider her to be a certifiable lunatic admitted that she was incapable of managing her pecuniary affairs. The aunt managed these and stated that she sent money for the patient's benefit "whenever necessary." By what legal right the aunt controlled this money did not appear. The provisions of the Lunacy Act in respect to the administration of property apply not only to persons lawfully detained as lunatics but to every person with regard to whom it is proved to the satisfaction of the judge in lunacy that such person is through mental infirmity incapable of managing his or her affairs. It is right that the property of the feeble-minded, especially such as are maintained for profit, should be administered by a duly authorised person appointed in accordance with these provisions. But such cases will not be brought to light, the feeble-minded will not have the protection which the law provides, and their property will be liable to misappropriation if they are suffered to be detained in private houses without official cognisance.

In the specific instances to which we have referred the medical men who periodically visited the patients did not admit that they were certifiably insane but allowed that they were feeble-minded. A distinction of this kind has in it the makings of a futile metaphysical discussion which may be avoided by judging cases of the nature of the above from the practical point of view of expediency. If from this point of view certification were considered proper no one will go so far as to maintain that a certificate sufficient to justify detention under the Lunacy Act could not be signed in these two cases. Practically the question which has to be answered is whether it is in the public interest that weak-minded persons who may be possessed of property should be kept, on no other authority than that of a private agreement between their relatives and the person assuming charge for profit, in private houses exempt from official supervision without any guarantee of adequate and independent medical attendance and under the charge of

persons of whose competence there is no official knowledge. The answer must be in the negative. It is, of course, possible that even in hospitals and industrial colonies for epileptics a case may from time to time occur which on technical grounds should be certified under the Lunacy Act equally with similar cases in private care. This can be but seldom, since such establishments depend largely upon public support which they cannot afford to alienate and are under committees of management which appoint visiting physicians of acknowledged competence and standing and properly qualified nurses; moreover, there can be no motive for detention, seeing that demands upon the accommodation are great. The case of such establishments is not for one moment to be compared with that of the private home. A consideration of the various points to which we have alluded would seem to lead to the conclusion that if persons exhibiting mental defect, or debility, or early symptoms of mental disorder are to be kept and detained for profit in so-called "nursing homes," outside the existing provisions of the Lunacy Act, it should be only upon some system of registration of the places and individuals receiving them—a system which, without going into details, should provide for regular visitation by representatives of the Board of Commissioners in Lunacy. Since that Board as constituted is numerically quite inadequate for the task any such scheme of registration would involve the appointment of deputy commissioners or of persons authorised to represent the Commissioners in various districts of the country.

The Report of the Medical Officer of Health of the Administrative County of London.

SIR SHIRLEY F. MURPHY'S report on the health of the Administrative County of London for the year 1904 has just been published. In our remarks in THE LANCET of Jan. 21st, 1905, on his previous report we referred in some detail to the reorganisation of the public health department at Spring-gardens which had just then been accomplished by the London County Council. This had obviously become necessary in consequence of the increased complexity of public health administration in recent years, especially in view of the additional responsibilities undertaken by the Council in respect of education, and could not with prudence be postponed indefinitely. And just in proportion as the responsibilities of the County Council have expanded, the work of its public health department has increased. Accordingly we are not surprised to find that the county medical officer's report for 1904 covers much more ground than did any of its predecessors. For the first time since his appointment Sir SHIRLEY MURPHY presents to the Council, in addition to his own report as chief medical officer of health, the report of his assistant medical officer, Dr. W. H. HAMER, and also the report of Dr. J. KERR, the medical officer for education purposes. Within the compass of a single article it would be impossible to do justice even to the first of these reports, not to mention the others. We therefore propose on the present occasion to deal briefly with certain portions of Sir SHIRLEY MURPHY'S own report and to return in future numbers of THE LANCET to a consideration of the remaining contents of the volume.

In view of its dual responsibility as the educational as well as the public health authority of the metropolis, the County Council has of necessity directed earnest attention to the physical condition of children. Very appropriately, therefore, the county medical officer's first report under the new *régime* deals fully with the question of infantile mortality. The recent publication of the report of the Committee on Physical Deterioration has brought into prominence the question of the existence of physical degeneration among the young and in many directions has led to inquiry of a character likely in the near future to produce results definitely protective of infant life. For instance, the Local Government Board as chief guardian of the public health of this country has recently issued to medical officers of health an additional form of return designed to ascertain for each sanitary area not only the amount but also the causes of infant mortality *in the several months* of the first year of life. As these returns are now asked for as part of the information required by the Board in the annual reports of all medical officers of health, it is obvious that the central authority will shortly possess the particular kind of information that will enable it to prosecute inquiries into local excesses of infantile mortality—information which hitherto has been held to be required exclusively by the sanitary authorities concerned. Following similar lines in his present report Sir SHIRLEY MURPHY adds a new feature to his ordinary remarks on infantile loss of life. Availing himself of a table contained in the report of the Committee on Physical Deterioration, which shows for the county of London the deaths in each month of the first year of life, he has calculated the probability of a child living a month, and so the number of survivors at the beginning of each month of age out of every 100,000 children born in London. This table is inserted in the report presumably with the object of providing for the use of the medical officers in the metropolitan boroughs a standard with which correspond-ing data for their several jurisdictions may be compared. In future reports we hope to see particulars of the diseases which are especially fatal in the earlier months of infant life. Meantime we note that Sir SHIRLEY MURPHY speaks hopefully of the general increase of organised effort to reduce the mortality of infants which is now observable in London.

It is evident that the medical officers of health of the several metropolitan boroughs are showing praiseworthy activity in this direction. In many districts specially trained women inspectors systematically visit the homes of the poor and tender to the mothers practical advice concerning the proper feeding, clothing, and management of young children. As an instance of substantial assistance which a sanitary authority can in such circumstances be induced to render we are reminded that in Battersea Dr. G. F. MCCLEARY, the medical officer of health, has established depôts in which milk from approved sources is sterilised and "modified" under his personal supervision, the milk being sold for the feeding of infants at reasonable prices, which at present, at any rate, are below the cost of production, the difference being presumably made good by the borough council. Dr. MCCLEARY reports a great decrease of infantile mortality since 1901 in those cases which have been made the subject of experiment.

In Finsbury likewise a milk depôt has been established, in this case by voluntary agency, under the control of a medical committee of which the medical officer of health is a member. The milk is derived from an approved farm at Theydon Bois in Essex, where the cows are milked with the necessary precautions to secure cleanliness and where the milk is sterilised, modified, and bottled before transmission to London. Here, too, the supply of "pure milk" for infant consumption is regarded as an experiment which for the present is to be tried in a limited number of families. The medical officer of health of Finsbury, Dr. G. NEWMAN, has taken pains to compare the mortality in Finsbury among infants fed in different ways. He finds that hand-fed infants under three months old die from diarrhœa at four times the average rate and that a similar excess of fatality in the hand-fed continues up to the ninth month of life. After this age, however, there occurs a reduction in mortality from diarrhœa which Dr. NEWMAN attributes to the fact that many of the surviving infants had in earlier months enjoyed the advantage of breast-feeding and had thereby acquired additional power of resisting infection. It appears, however, that even amongst breast-fed children the mortality after the ninth month is relatively high, for the reason that many of them receive insufficient nourishment from the milk of mothers who are unequal to the strain of prolonged lactation. The experience of Finsbury apparently suggests the conclusion that of all forms of infant food condensed milk is the worst; that cow's milk, when substituted for human milk, greatly increases the liability to death; and that artificial feeding of whatever kind is attended by a high rate of mortality. Among children fed on condensed milk mortality from diarrhœa in the first six months of life is nearly three times the average, while among those fed on cow's milk it is less than twice the average. Between the sixth and ninth month condensed milk still gives a high mortality but the discrepancy is less marked. Furthermore, the Finsbury investigation shows that a heavy mortality from diarrhœa is by no means the only ill-effect traceable to the use of condensed milk for feeding infants. The enfeebled constitution resulting from the virtual starvation thus caused produces a high fatality from the wasting diseases of childhood and indirectly leads to a fatal termination in the case of other ailments less intimately connected with feeding. Between the third and ninth months of age the deaths from causes other than diarrhœa in infants whose sustenance depends on condensed milk amount to twice the average number, whilst the deaths in those fed on cow's milk are, in the first age period, equal to the average, in the second age period only slightly above, and in the third actually below the average. According to the report condensed milk seems to be condemned without reservation as food for infants; but we presume that certain brands of that commodity—for example, the so-called skimmed-milk brands—are more objectionable than others. As the Finsbury experiment is doubtless still proceeding it would be interesting to learn whether all forms of condensed milk are to be avoided, even in the slums, and in hot weather when it is impossible to keep cow's milk undecomposed beyond a few hours.

The infectious diseases of children occupy a prominent place in Sir SHIRLEY MURPHY'S report. For many years past, in fact, ever since the acquisition by London of powers for the compulsory notification of certain of these diseases, the county medical officer of health has devoted considerable attention to the degree in which the prevalence of infectious diseases is affected by attendance at school. But inasmuch as some of the commonest and most fatal infectious diseases, measles and whooping-cough, for example, are not for the present notifiable in the metropolis, the extent to which their prevalence depends on the enforced aggregation of young children for educational purposes can only be inferred approximately by means of the death-rate, which, by the way, can only be ascertained after the mischief is done. As regards scarlet fever and diphtheria, however, Sir SHIRLEY MURPHY has shown by a laborious series of observations extending over many years that the spread and, to some extent, the intensity of these diseases are largely influenced, if not controlled, by compulsory attendance at school. Since general attention has been directed to the danger to health and life thus caused, the suggestion has been made by well-informed persons that young children should be protected from risk by exclusion from school at that period of life when they are in the highest degree susceptible to infection. In fact, a definite proposal is now before the public, as well as before the County Council as the educational authority, that children below the age of five years should be totally excluded from the operation of the Elementary Education Acts. With commendable caution the county medical officer, in view of his great official responsibility, abstains from publishing his personal opinion either for or against this proposal. He, however, puts the case very fairly as follows: "The extent to which exclusion from school of children under five years of age in London would reduce infectious disease in the London population may be considered in respect of two diseases, to the prevalence of which school attendance undoubtedly contributes, and cases of which are notified—viz., diphtheria and scarlet fever. During the last ten years the decline in the prevalence of these diseases during the August holiday has been pointed out in these reports, a decline which was most marked among children of school age and which was often observed to be manifested among children in the pre-school age and in persons above school age a week later than it was manifested among school-attending children, suggesting that a considerable proportion of the persons who suffer from these diseases at those ages receive their infection from children who have themselves been infected in school." The whole question of exclusion from school, for the protection of their health, of infants below a certain age being now officially placed before the education authorities, we shall be interested to learn the decision of the County Council on a matter which is undoubtedly of supreme interest to the rising generation of Londoners.

FOWEY COTTAGE HOSPITAL.—Three performances of *The Rivals* were recently given at Fowey in aid of funds for providing an "emergency room" at the cottage hospital in that town. The comedy was produced under the management of Mr. Quiller Couch and about £40 have been handed over to the hospital.

Annotations.

"Ne quid nimis."

THE STRAIN ON THE STREETS OF MOTOR TRAFFIC.

THE rapid displacement of the horse-drawn omnibus by the motor omnibus in many of the great highways of the metropolis and elsewhere raises the very important question as to whether the latter vehicle does not impose an extra strain upon the roadway which the countless mains under its surface may not be able to withstand. We have no exact statistics at our disposal but the "man in the street" must easily recognise that the motor omnibus is a much heavier vehicle than the horse-drawn omnibus, and, moreover, it is licensed to carry a much greater number of passengers. There are only four points on which the motor omnibus is supported, whereas, if in our calculation we reckon the weight of the horses in the old omnibus, the number of supporting points is extended to 12. The distribution of the greater weight of the motor omnibus is therefore not divided in the same way as in the old style of vehicle with its horses. The pressure at each point of contact of the motor omnibus with the roadway must altogether be much greater. Besides this there is also the fact that the vibration of the motor omnibus is very considerable and when its powerful brakes are brought into play on a speed which is invariably greater than that of the horse omnibus, the wear and tear on the roadway must leave their mark in some direction. It does not appear, however, that this is manifested on the actual surface of the roadway, probably on account of the rubber tyres, but there must be a considerable effect beneath due to pressure and vibration. People who are unfortunate enough to live on the margin of roadways now invaded by a regular service of motor omnibuses where previously there was an equally regular service of horse omnibuses are complaining loudly, and doubtless justly, apart from the irritating noise, of the severe vibrations set up in their houses by the new traffic. The houses, they say, tremble to their foundations, the windows shake, the glasses clink, and the panels rattle. If this be the case it is somewhat alarming to think what results may be produced on the service pipes under the streets which convey water, gas, and electricity at high pressure. Not long ago a high-pressure water main burst in one of the streets of London, close by which, as it happens, a regular service of motor omnibuses had been instituted and considerable damage and inconvenience were sustained. Fortunately, the electric and gas mains did not appear to have suffered or the consequences might have been disastrous. We are not aware that this occurrence had any actual connexion with the introduction of heavier traffic in the streets but the two facts are, at all events, an interesting coincidence. We are prone to overlook the enormous potentialities that lie buried underneath our pavements and roadways in the form of gas, water, and electric mains and the great mischief that might arise by the coöperation of these agents when put out of their course by a rupture of the ducts which could easily be occasioned by the increased vibration and pressure of heavy motor traffic. The possibility, too, of a main sewer being smashed and distributing its contents through the soil is not pleasant to contemplate.

THE MANAGEMENT OF AMERICAN HOSPITALS.

THE New York *Medical Record* of Dec. 2nd, 1905, contains an interesting article by Dr. Arpad G. Gerster descriptive of the system of American hospital economy. The writer shows that compared with European and British hospitals American institutions of a like nature are conducted on far more extravagant lines. For instance, several hospitals in New York and in other towns of the United States expend more than 8*s*. per day upon their patients, while a few institutions expend as much as 10*s*. a day. The daily cost of patients in the principal London hospitals is also given, as well as that of some of the largest and best known hospitals of Paris, Germany, Vienna, and Budapest. In this connexion it is interesting to note that, according to the writer in the *Medical Record*, the French hospitals and those of the continent are managed far more economically than are the hospitals of London, and that the American institutions in almost every instance largely exceed in daily expenditure those of this city. Of course, the great difference existing between the purchasing capacity of money in America and in Europe must be taken into account, but even when this difference has been recognised a satisfactory explanation of the profuse outlay in American hospitals is not easy to give. Dr. Gerster favours the methods of management in vogue in the hospitals of Hamburg, Berlin, Vienna, and Budapest—that is, their supreme direction lies invariably with the Government, in State institutions directly and in municipal institutions indirectly. The hospitals of the aforementioned cities are each controlled by directors, not exceeding three in number. The hospitals of New York are variously governed. The city hospitals are controlled by a board nominated by, and responsible to, the mayor. In the German and Mount Sinai hospitals the basis of organisation is a paying and voting membership which, should abuse occur, may potentially at any time demand strict account of the managers. The other hospitals are governed by boards which fill their own vacancies and are thus practically responsible to nobody but themselves. Supervision by State is tolerated by none. Dr. Gerster is of the opinion that if German methods of management were adopted by American hospitals not only would much waste of money be avoided but they would be conducted with greater smoothness and efficiency.

THE MEDICINAL PROPERTIES OF GENTIAN.

A WRITER in the *Archives de Médecine Navale* for November last calls the attention of medical officers of the French navy to a recent work by Dr. G. Tanret, entitled "Contribution à l'Étude de la Gentiane." In a short introduction the writer says that his object is to rescue from oblivion a medicinal substance which was formerly extensively used in the treatment of intermittent fevers and at the same time to inquire into its intimate composition and pharmaceutical value. The book is divided into three parts, dealing respectively with the chemistry, the physiology, and the medicinal properties of the root. The gentianin isolated in 1821 by Henry and Caventou is not a simple body, for first Tromsdorf in 1837, and subsequently Leconte in 1838 separated from it a very bitter resinous substance and some yellow crystals to which the latter gave the name of gentisine. These investigators all employed the dried root, but it occurred to Kromayer that better results might follow if he used the fresh root. He accordingly discovered gentiopicrine and also recognised it as a glucoside. Meyer, in 1882, discovered gentianose, but the composition of this substance was determined by Bourquelot, Nardin, and Hérissey, who also isolated gentiobiose and ascertained the presence of pectine in the fresh root upon which all these investigators operated. The process for preparing gentiopicrine being long and troublesome Dr. Tanret was led to seek for a more simple method. Having satisfied himself that this glucoside existed in a free state in the alcoholic extract of the fresh root he found in acetic ether an excellent solvent. In addition to crystallised gentiopicrine the ether extracts from fresh gentian an amorphous glucoside, very soluble in water, more

bitter even than gentiopicrine, and in about the same quantity. To this Dr. Tanret proposes to give the name of gentiamarine. In the second part of his book the writer comes to the conclusion that though gentiopicrine may not be a very powerful antiseptic it is able nevertheless to exercise a marked effect upon the infusoria. It immobilises and kills them very rapidly and it is no doubt to this destructive action that its beneficial influence in malaria is due. This glucoside is not injurious to animals in the upper scale of creation. It is eliminated slowly with the urine but not with the saliva and has distinct purgative qualities. One and a half grammes taken fasting cause a semi-liquid and painless alvine evacuation in two or three hours. In larger doses the effects are drastic but almost without pain. Taken with food the purgative action is greatly diminished. In healthy subjects this glucoside has no perceptible influence on the bodily temperature. In order to study the therapeutical value of gentian and its derivatives Dr. Tanret visited Aleria in Corsica, which is notorious for the presence of malaria. His description of the place and its inhabitants is interesting. The people are acquainted with quinine but use it ignorantly and have little confidence in its virtues, preferring indigenous plants, such as gentian, centuary, and maritime absinthe. When using gentian they infuse or macerate the fresh root which they much prefer to the dried root. They are also in the habit of chewing gentian root continually by way of a prophylactic. As gentiopicrine is capable of destroying the hæmatozoa of malaria it occurred to Dr. Tancret to make a trial of it in animals that had been inoculated with the sleeping sickness but his experiments have not been crowned with success. "They show the absolute powerlessness of gentiopicrine *vis-à vis* the trypanosoma Gambiense."

THE FEEDING OF CHILDREN ATTENDING PUBLIC ELEMENTARY SCHOOLS.

ON March 14th, 1905, an inter-departmental committee was appointed by Lord Londonderry to inquire into the questions (1) of the medical inspection of children attending public elementary schools and (2) as to the methods employed by various voluntary agencies for feeding such children, and whether relief of this character could be better organised without any charge upon the public funds. The report of the committee was issued towards the end of last year and we commented upon it in a leading article which appeared at p. 1629 of THE LANCET of Dec. 2nd. The second volume of the report has just appeared—namely, that containing the minutes of evidence, sundry appendices, and the index. The witnesses, who numbered 44, were all persons eminently capable of giving evidence as to the various matters into which the committee was inquiring. They comprised medical men, both medical officers of education committees and others, members of education committees, and those concerned with the feeding of children, such as Mrs. Burgwin, the well-known honorary secretary of the *Referee* Children's Free Breakfast and Dinner Fund, and Mr. J. R. Diggle, the chairman of the London Schools Dinner Association. The evidence taken was very voluminous and is of great interest. The committee made sundry recommendations for better organisation and it must be remembered that by the terms of reference the committee was not called upon to express any opinion as to the wisdom, from an economic or a social point of view, of relieving children apart from their families by the provision of school meals. The committee is of opinion that the local education authority should be kept informed of any feeding of scholars organised in connexion with schools maintained by the authority and that the authority should coöperate with any feeding agency. The object of any feeding agency should be to feed the most destitute children regularly rather than a large number irregularly. Greater efforts might be made to obtain from parents the whole or part of the cost of feeding their children. The whole report forms a valuable mass of information upon which future action may be taken, and although we do not here enter into the question of how the expense of feeding children should be met, yet we have no doubt but that it is mere waste of time to try to educate a starving child. Ill-fed children do exist and if voluntary efforts are to continue to be the method adopted for the feeding of the same those who spend money and trouble in carrying out this beneficent work will find ample help in the consideration of the matters contained in the report of the committee.

WHAT IS WHISKY?

LAST Monday the proceedings in this case at the North London police court were devoted to the hearing of the evidence of the first scientific witness called for the defence, Mr. Robert R. Tatlock, public analyst to the corporation of Glasgow. In the course of making analyses of a number of whiskies the witness stated that he had found some to give a figure for secondary products agreeing with that put in as a limit by Dr. F. L. Teed—viz., 380 parts per 100,000 parts of alcohol present, but others had yielded figures as low as 241. A whisky containing that amount of secondary products was a pure malt still product. He considered it a recommendation in regard to a whisky to show a small proportion of secondary products. He concluded that the action of whiskies upon the human organism depended largely upon the physical condition of the consumer and whether the spirit was taken upon a full or an empty stomach. At the conclusion of this evidence the case was again adjourned. It may be added that previously to this evidence a witness representing a large firm of distillers to whom we referred last week was recalled and in reply to the magistrate (Mr. Fordham) stated that people as a rule preferred the milder whiskies of the patent still. Mr. Fordham then remarked that he could not see on the labels of the bottles of whisky produced in court any indication that the spirit was of patent still origin, and he suggested that if as this witness stated the public preferred patent still spirit it would be to the advantage of the trade to describe it so. The witness replied that neither was pot still whisky so described, which drew from Mr. Fordham the remark, "Because, as I understand it, that is whisky."

POISONING BY OIL OF EUCALYPTUS.

THE value of the warnings as to the danger of taking oil of eucalyptus in too large doses, recently published in THE LANCET by Dr. Henry S. Taylor[1] of Ficksburg, Orange River Colony, and Dr. F. Lucas Benham[2] of Exeter, South Australia, has been accentuated by the death of a man, aged 34 years, at Derby on Dec. 28th, 1905, through taking an overdose of the oil. The deceased sent to a druggist for threepennyworth of eucalyptus oil for a cold and drank the whole of it—six drachms—in an equal quantity of warm water. In consequence of its effects an emetic of salt and water was administered but he became unconscious and was taken to the Derbyshire Royal Infirmary where he died two days later. Dr. E. C. Myott, house physician at the infirmary, stated at the inquest that the deceased died practically from taking a large dose of the oil; acute congestion of the lungs was also present. A verdict of "Death from misadventure" was returned, the jury being of opinion that eucalyptus oil should be scheduled as a poison.

[1] THE LANCET, Sept. 30th, 1905, p. 963.
[2] THE LANCET, Dec. 30th, 1905, p. 1894

In an annotation on the Sources and Properties of Eucalyptus Oil[3] we recently summarised the differences between the many varieties of eucalyptus oil that are sold and drew attention to the preference which now exists for oils containing cineol (eucalyptol)—e.g., the oil of *Eucalyptus globulus* of the Pharmacopœia—to the exclusion of oils poor in cineol and rich in phellandrene, as typified by the oil of *Eucalyptus amygdalina*, which is still preferred in Australia and which first gained for eucalyptus its present popularity in this country. The wisdom of this choice has not, however, remained unchallenged. Experiments have been made in the physiological laboratory of the University of Sydney by Mr. Cuthbert Hall, under the supervision of Professor D. A. Walsh,[4] with the result that doubt is thrown on the therapeutic value of cineol. The experiments were made with authentic samples of various eucalyptus oils prepared by Mr. Richard T. Baker, curator of the Technological Museum, Sydney, New South Wales, and his assistants. Of the 22 distinct constituents that have hitherto been detected in various eucalyptus oils the most important, according to Mr. Hall, from a bactericidal and physiological point of view, are phellandrene, aromadendral, and piperitone. Some of the constituents occur in small quantities or only in one or two varieties of the oil, others are removed during rectification owing to their low boiling point, while others are so irritating that they can not be used medicinally. The constituents of little consequence include methyl, ethyl, isobutyl, amyl and other alcohols, geraniol, the aldehydes citral and citronellal, geranyl acetate, cymene, amyl eudesmate, and valeric and acetic acid esters. Two of the aldehydes, butaldehyde and valeraldehyde, have an intensely irritating effect when inhaled. Mr. Hall selected for bactericidal experiments the following constituents: aromadendral, piperitone, eudesmol in 10 per cent. piperitone, phellandrene, dextropinene, lævopinene, aromadendrene, and cineol. Two species of micro-organisms were selected—staphylococcus pyogenes aureus, as a more resistant type, and bacillus coli communis, as a less resistant one. As a control, and to have a standard of comparison of his results with those of other observers, a 2½ per cent. solution of phenol in water was used. In this solution the staphylococcus was killed in five minutes and the bacillus in half an hour. The relative bactericidal properties of the principal constituents are shown in the following table:—

—	Bacillus coli communis.		Staphylococcus pyogenes aureus.	
	Hours.	Minutes.	Hours.	Minutes.
Aromadendral	—	10	—	15
Piperitone	—	40	4	—
Eudesmol in 10 per cent. piperitone...	—	30	—	—
Phellandrene	1½	—	2½	—
Dextropinene	2½	—	4	—
Lævopinene...	3	—	5½	—
Aromadendrene...	5	—	6	—
Cineol	8	—	2	—

The low bactericidal value of cineol as regards the bacillus coli is especially noteworthy. Further experiments showed that different specimens of cineol vary considerably in bactericidal power, depending upon the quantity of ozone contained in them. From these results it is evident that, apart from the presence of ozone, oils containing aromadendral—e.g., *Eucalyptus hemiphloia*, may be considered the most powerful bactericides, but it is not certain whether they could be used medicinally. Next in order come the oils containing piperitone, eudesmol, and phellandrene. The substances aromadendral, cineol, and piperitone only develop ozone in the very slightest degree and then probably only because it is almost impossible to free them from traces of the terpenes—i.e., the substances mentioned having the termination *ene*. Mr. Hall shows that the presence of ozone is due to the terpenes, of which phellandrene and aromadendrene ozonise more quickly than dextropinene and the latter more quickly than lævopinene. Mr. Hall draws some conclusions of considerable practical importance. He considers that cineol, except when acting as a carrier of ozone, is the weakest bactericidal constituent of the oils and regards ozone as the most important constituent. As the pinenes are the source of the ozone, especially phellandrene and aromadendrene, it follows that cineol is best prepared from oils containing terpenes. He suggests that the rectified oils of commerce should be tested for the presence of ozone and that piperitone is likely to prove a valuable constituent and is worth further trial. Mr. Hall considers it an open question whether an oil containing phellandrene—e.g., *Eucalyptus odorata* and *Eucalyptus amygdalina*, or one containing aromadendral—e.g., *Eucalyptus cneorifolia*, or a definitely ozonised oil should not be substituted for an oil such as *Eucalyptus globulus*, containing a uniform percentage of cineol and little or no phellandrene. He further recommends that the oil should be stored for at least two months in vessels loosely closed with a plug of cotton-wool and shaken daily so as to expose a fresh layer of oil to the influence of the air. The action of sunlight appears to favour the production of ozone. Mr. Hall is prosecuting the investigation in order to determine to what constituents the known action of eucalyptus in malaria is due, as well as to find out the constituent of *Eucalyptus globulus* which renders it more efficient than *Eucalyptus punctata* in preventing glycosuria.

[3] THE LANCET, Oct. 7th, 1905, p. 1050.
[4] Pharmaceutical Journal, 4th series, vol. xix., p. 80.

THE ROYAL SANITARY INSTITUTE.

THE next course of lectures and demonstrations for sanitary officers at the Parkes Museum, Margaret-street, London, W., will begin Monday, Feb. 12th, and will end on May 2nd. The course is divided into two parts, the first consisting of elementary physics and chemistry, public health statutes, the practical duties of sanitary inspectors, municipal hygiene, and building construction; while the second deals principally with the inspection of meat and food. The lectures on sanitary law will be given on Feb. 12th, 13th, and 16th by Dr. J. Priestley, medical officer of health of Lambeth, and the duties of sanitary inspectors will be discussed on the 19th, 21st, and 23rd of the same month by Dr. G. Newman, medical officer of health of Finsbury. On the 26th and 28th of the month infectious diseases will be the subject of the lectures of Mr. A. Wellesley Harris, medical officer of health of Lewisham. On March 2nd, 6th, 7th, 9th, and 12th elementary physics and chemistry will be the subjects of Mr. E. J. Steegmann's lectures, and on the successive Mondays, Wednesdays, and Fridays of the same month various aspects of building construction will be dealt with by Mr. A. Saxon Snell, F.R.I.B.A., and other architects and civil engineers. The subjects for April 2nd and 4th are house drainage and water-supply and on the 6th Mr. Harris will deal with the composition of water, its pollution and purification. The remaining lectures of Part I. dealing with sewage will be delivered on April 9th, 10th, and 11th. The lecturers for Part II. are Mr. James King, M.R.C.V.S., veterinary inspector to the Metropolitan Cattle Market, Mr. W. Hunting, F.R.C.V.S., and Dr. E. P. Manby, medical inspector to the Local Government Board. Among the inspections of, and demonstrations at, various municipal and private works and buildings in

connexion with this course mention may be made of a visit to Willesden Infirmary on Feb. 24th, conducted by Mr. Saxon Snell. An inspection of the Tottenham disinfecting station and dust destructor, conducted by Dr. J. F. Butler-Hogan, will be made on March 3rd. An inspection and demonstration at Battersea disinfecting station, mortuary, and shelter will be conducted by Dr. G. F. McCleary on March 10th. There will be an inspection and demonstration at Sutton sewage works on March 17th, at the sewage and destructor works at Ealing on March 24th, at Lea Bridge waterworks on April 4th, at the Barking sewage outfall works on April 7th, at the East London Soap Works on April 25th, and at the Metropolitan Cattle Market, conducted by Mr. J. King on April 26th. The fee for Part I. is £2 12*s.* 6*d.* and for Part II. £1 1*s.* or £3 3*s.* for the complete course. Further particulars can be obtained from the Secretary, Parkes Museum, Margaret-street, London, W.

DEATH OF DR. SPRENGEL.

MEDICINE may justly claim to have lost a contributor to its progress in the death of Hermann Johann Philipp Sprengel, Ph.D. Heidelberg, which occurred on Jan. 14th. He was the inventor of the mercury air-pump bearing his name, which at one time was the only means of producing high vacua. Without it many very important advances in physiological science could not have been made; its use, for example, in the determination of the gases of the blood was indispensable. Many improvements on the original form of the Sprengel pump have, of course, been made, but the principle of pistons of mercury falling through a long narrow tube and carrying before them columns of air or gas still remains in practical use in scientific investigations. The brilliance of Sir William Crookes's discoveries in radiant matter was due in no small measure to the effectual way in which the Sprengel pump produced relatively high vacua and to this day we owe the vacuum incandescent electric lamp to the same invention. Dr. Sprengel's name is associated also with many high explosives and he was one of the first to recognise the application of picric acid for explosive purposes, lyddite being subsequently made from the melted acid. Many of his early laboratory days were spent in the chemical departments of Guy's and St. Bartholomew's Hospitals and at the latter institution he was contemporary with Stenhouse, Kekulè, Tuson, and Heaton, all of whom studied and taught chemistry in its relations to medical science.

RECOVERY FROM DIABETIC COMA UNDER ALKALINE INJECTIONS.

RECOVERY from diabetic coma is very rare. In the *Boston Medical and Surgical Journal* of Nov. 30th Dr. G. S. Sears has reported the following case. A boy, aged 13 years, was admitted into hospital on Feb. 25th, 1905. For four months he had suffered from excessive hunger and thirst and polyuria. His strength steadily failed and his weight fell from 75 to 59 pounds. During the last three days he complained of epigastric pain and grew duller and weaker. Examination showed an undersized, emaciated boy in a semi-comatose condition. His breath smelt strongly of acetone. His skin was dry and harsh and covered with bran-like scales. On the abdomen were a purpuric eruption and large veins. The liver and spleen were felt below the ribs. The extremities were cold and cyanotic. The pulse was rapid and barely perceptible. The respirations were 30, deep, and full. The pupils were dilated but reacted to light. The knee-jerks were absent. The urine was pale, of specific gravity 1033, and contained a trace of albumin and 5·3 per cent. of sugar. The sediment contained occasional hyaline and fine granular casts. In the 24 hours 156 ounces of urine were passed. Eight ounces of sterile salt solution containing bicarbonate of sodium almost to the point of saturation were injected under the skin in each mammary region. After a cleansing enema an attempt was made to administer the solution per rectum without success. Large quantities of a solution containing a heaped teaspoonful of bicarbonate of sodium to the tumblerful were given by the mouth to the limit of the patient's capacity. The stupor rapidly decreased but drowsiness persisted for several days. Convalescence was interrupted on March 12th by severe general convulsions which were thought to be uræmic, as the urine, suddenly diminished from an amount varying from eight to 11 pints in the 24 hours to three pints and hyaline and granular casts appeared in enormous numbers, but the albumin was not markedly increased. In spite of the large doses of the alkali the urine was persistently acid. The sugar varied from 1 to 3 per cent. under a diet which contained little bread and large quantities of milk. Acetone was generally present in the urine but its odour in the breath persisted only for a few days after admission. Suppuration occurred at the site of the injections. The literature of diabetic coma contains few cases of recovery under any treatment, though a number of cases of temporary recovery, principally under saline injections, have been recorded. Dr. Thomas Oliver has reported a case of permanent recovery after the injection of two and a half pints of normal saline solution into the median basilic vein.[1] 15 other cases of permanent recovery from an attack of coma, of all grades of severity from slight drowsiness to complete unconsciousness, have been recorded. The treatment generally adopted was the administration of a saline or an alkaline solution by the mouth or rectum or by subcutaneous or intravenous injection. Alkalies are given because of the part played by acid intoxication in diabetic coma. The method of administration seems to be less important than the amount of alkali given. Hypodermic injections are open to the objection that they are usually followed by suppuration and necrosis. Large doses by the mouth may produce vomiting and diarrhœa, but some of the best results were obtained by this method. While the measure of success may be sought in the rendering of the urine alkaline coma has been checked in spite of a continued acid reaction.

"ARTIFICIAL ALBUMIN."

THE large hall of the Hofmannshaus, the Berlin headquarters of the German Chemical Society, was filled recently by a large and representative audience, which included also members of English and Austrian chemical societies, to hear Professor Dr. Emil Fischer, the latest recipient of the Nobel Prize for Chemical Research, deliver a lecture on the possibilities of preparing artificial albumin. After a short review of the research work already done in this line the lecturer came to the group of bodies known as amido-acids. There existed, he said, a great number of these—indeed, 14 years ago he himself had discovered another of them. Since then he had succeeded in separating many others. Amido-acids, Dr. Fischer continued, were milestones on the road to the production of artificial albumin, despite the late Professor Virchow's assertion that the artificial production of this was impossible owing to the number of substances going towards the making up of albumin. If the water contained in amido-acids is eliminated the anhydrides of the acids are obtained. These anhydrides bear many points of resemblance with the peptones which occur in the stomachs of all carnivorous and herbivorous animals but which have never been artificially produced. It is a well-established fact, Dr. Fischer went on, that these peptones are decomposition products of albumin and the result of

[1] THE LANCET, August 13th, 1898, p. 401.

the action of certain reagents found in the pancreatic glands and known as ferments which hydrolyse the albumin. This decomposition process is known to the lay mind as digestion. Since albumin decomposes into peptones, the lecturer proceeded, the conclusion may be drawn that albumin is built up of many "peptines," the name given to the anhydrides of amido-acids from their great resemblance to peptones. The lecturer stated that he had by synthesis of seven peptines produced a compound bearing much resemblance to albumin. This product froths and can be beaten into foam and is decomposed or digested when treated with the juice taken from the pancreatic duct of a dog. Professor Fischer, therefore, supposes that from 30 to 40 peptines form a peptone and that albumin is the compound of several peptones. The lecture was heard with great attention by the assembly.

THE CARE AND TREATMENT OF THE INSANE IN NEW ZEALAND.

THE report of the Inspector-General of Mental Hospitals of the Colony of New Zealand for the year 1904 presents many interesting features. It is pleasing to note that institutions for the treatment of mental disorders, of which there were eight at the date of the report, are not called "asylums" nor are the patients designated as "lunatics," and it is therefore permissible to conclude that these uncouth terms have no place in the official nomenclature of the colony. The boarding-out system appears as yet to be undeveloped in New Zealand and there is need for after-care associations to find homes for, and generally to supervise, harmless patients who might be discharged from the hospitals had they homes to go to. Dr. D. Macgregor, the inspector-general, combats the allegation that insanity is increasing in the colony, and his figures show that the progressive increase in the proportion of the insane to the population since 1878 is due to diminution in the number of deaths and discharges in the hospitals, to increase in the number of people resident over 50 years of age, and to the increased percentage of admissions of persons over 50 to the total admissions. On the other hand, the proportion of admissions to population is less than in 1878 and has not varied much since 1893. But although there is no increase in insanity the Inspector-General considers that it cannot be denied that with the selected population of the colony and with its evenly distributed prosperity and less strenuous life there is too high a proportion of mental disorder in the community. For this statement there is ground, since we find that the proportion of the insane to the population in New Zealand in 1904 was 1 in 285 or 3·51 per 1000, which figures, curiously enough, were precisely those officially recorded for England and Wales on Jan. 1st, 1905. The report goes on to describe institutions for the insane as "the monuments of failure" in the effort to deal with the problem of insanity. It cannot be denied that they indicate the failure of prophylaxis. Dr. Macgregor takes the view that it would be too great an interference with the liberty of the subject to forbid the marriage of unsuitable persons. But it would be idle to ignore the fact that there are at the present time many whose opinion is entitled to consideration who believe that it would be a mild measure to forbid the marriage of certain of the insane or the mentally defective and who do not advocate that measure simply because they recognise that it would not hinder the transmission of insanity in the case of children born out of wedlock. By such far more radical methods of prevention are advocated. Dr. Macgregor himself recognises that "to preach the doctrine of heredity and stress is to speak to the deaf." The remedy he suggests is a State insurance system under which, "on the principle that the issue of such unions may become chargeable to the State, a proportionately higher premium" might be fixed and thus the contracting parties enlightened "by the most forceful of arguments." This suggestion requires, perhaps, some further elaboration in order that it may be understood properly. A system of compulsory insurance is apparently suggested and if so the "liberty of the subject" is threatened in another way. In any case it is by no means clear how such a system could exercise an effectual deterrent influence upon the irresponsible masses of the unsound and feeble in mind. It is of interest to note that the idea of the reception house for cases of mental disorder in the initial stages, which has of late years been brought forward at home, has been put into practice in New Zealand, an estate with two houses available for patients having been attached to one of the mental hospitals. Into these houses patients are received, and spend the whole of the time for which they are under treatment unless they become obviously unfit, in which case they are transferred to the main hospital. The report states that the time has come to deal with the question of the separate accommodation of the criminal insane of the colony. The mental hospitals of New Zealand are to be congratulated upon the high recovery-rate which they are able to show with but few exceptions since 1878 and which amounted to 45·34 per cent. of the admissions in 1904. The death-rate has been uniformly low since 1876, being 6·38 per cent. of the average number resident in 1904.

THE INTERNATIONAL CONGRESS OF MEDICINE AND THE SEA JOURNEY TO LISBON.

IT is well to take time by the forelock and we are pleased to hear that the Booth line of Royal Mail steamers has already made arrangements for the British members of the Fifteenth International Congress of Medicine who elect to proceed to Lisbon by sea. One of the best and newest ships of the company, the *Ambrose*, will leave Liverpool on April 9th. From London the passengers are booked through *viâ* Havre, leaving Waterloo on the evening of April 11th, and they will be on board the *Ambrose* at Havre next morning in time for breakfast. The ship is due at Leixoes for Oporto early on the 14th and the passengers will have the best part of two days to see the Roman and Moorish remains, and the picturesque and populated banks of the Douro, the prosperous capital of the port wine trade. Finally, the ship is due at Lisbon on the morning of the 17th, so that the passengers will be able to instal themselves comfortably and see some of the sights of the Portuguese capital before the congress begins. To those who have not made sure of their rooms it will be an advantage to arrive early. It is doubtful whether the better class hotels of Lisbon possess, if taken altogether, 1000 beds. But some of the purely Portuguese second-class hotels are very clean and comfortable, and the cooking is not spoilt by abortive attempts to imitate English dishes. But so that its passengers should not be homeless on landing, the Booth line has secured 50 beds in a newly built hotel, where all the modern conveniences and improvements will be found, together with 20 more beds at the well-known Central Hotel. It is needless to add that the journey by sea, especially if a return ticket is taken, is some 40 to 50 per cent. cheaper than the overland route and includes board. The Pacific Steam Navigation Co. is also running a steamer from Liverpool on April 12th, which might be convenient, especially to members proceeding to the Congress from the north of England. From Liverpool this steamer sails directly to La Rochelle-Pallice, which is within four miles of La Rochelle. Then it proceeds to Corunna and Oporto, reaching Lisbon on April 18th—that is, one day before the Congress.

LECTURES will be given at the Hospital for Sick Children, Great Ormond-street, London, W.C., on Thursday afternoons, at 4 o'clock, by members of the staff. The course will

commence on Thursday, Jan. 25th, when Mr. T. H. Kellock will lecture on Abscesses in Connexion with Spinal Caries and their Treatment.

Mr. Jonathan Hutchinson's Reminiscences of the Hunterian Society, which he will give in the form of an address to the society on Wednesday next, Jan. 24th, should be full of interest to members of the medical profession. The society cordially invites the presence of all practitioners.

Sir William H. Bennett has resigned his position as surgeon to St. George's Hospital and in recognition of his long services to the institution has been appointed consulting surgeon.

A NEW PLAGUE PROPHYLACTIC.

Professor E. Klein has made a preliminary report to Mr. W. H. Power, Principal Medical Officer of the Local Government Board, upon the subject of a new plague prophylactic, and the report is of such great medical interest that we publish it practically in full.

Professor Klein commences by showing that the principle underlying the preparation of plague prophylactics such as have hitherto been employed has its basis in the well-known fact that immunity of an animal to plague may be induced by injecting into it a certain dose of culture of dead plague bacilli or their extracts. "Thus," he says, "Haffkine uses a broth culture containing a large amount of bacillary growth, which culture has previously been subjected to heat (70° C.) sufficient to kill the bacilli. As Haffkine has shown, and as is generally the practice wherever this prophylactic is used, the amount of bacillary growth determines in a somewhat rough and ready manner the efficacy, and therefore the dosage, of the prophylactic. With Calmette, as also at the Pasteur Institute, the prophylactic is an emulsion of the bacillary growth taken from the surface of solid agar cultures. On the other hand, Lustig uses in preparation of his prophylactic, or rather his curative serum, the precipitate obtained from an alkaline emulsion of an agar culture of B. pestis. Similar processes are employed by others in preparation of their plague prophylactic. According to numerous results hitherto published in India, South Africa, and elsewhere, the first two prophylactics—viz., Haffkine's and prophylactic prepared in the manner adopted by Calmette and the Pasteur Institute—are those which are most reliable. Such disadvantages as are attached to them are the disadvantages generally inherent to all fluids prepared from artificial cultures, viz., the difficulty of preservation and above all the difficulty of securing, when large amounts of material are prepared at one time, uniformity of strength—i.e., efficacy for every single dose."

The above disadvantages have led Professor Klein to investigate the matter in a new direction; to attempt, that is, to obtain a prophylactic free from the above defects. The results so far obtained by him in a large number of experiments carried out with this view justify, he considers, a claim to success in his object. The following is his report:—

The procedure which I adopt in preparing this new prophylactic is based on the following considerations and observations:—

1. Investigating the vitality of B. pestis in certain organs (bubo, spleen, lung) of animals dead of plague, organs which had been subjected to drying on various materials (wood, cloth, linen) at various temperatures over sulphuric acid, I found that after all bacilli pestis originally contained in such plague organs had been killed in the process of drying, emulsion made of these dried organs and injected in definite amount into mice and rats was capable of causing death of those rodents within 20 hours or less—the animals exhibiting phenomena not differing from those observed in acute plague, except, of course, that their tissues did not after death contain any B. pestis. Also I found, when employing for injection an amount of emulsion insufficient to cause speedy death, that the animals, though made ill—exhibiting, for instance, local tumour and more or less constitutional disturbance—commonly recovered; and further that these recovered animals when tested later on by injection with virulent B. pestis were refractory to plague infection. From this it would seem that the dried plague organs, though not containing any living B. pestis are, nevertheless, imbued with a powerful plague toxin which in appropriate dosage may serve as a prophylactic.

2. I have shown in my reports to the Local Government Board for 1901–1902 and 1902–1903 that guinea-pigs inoculated cutaneously with plague material (by an abrasion or a scratch of the cutis) develop as a general rule (unless, indeed, the infective material be of extreme virulence) plague in what I have termed the "subacute form"; a form marked by necrotic bubo, necrotic nodules in the spleen and liver, and particularly by necrotic nodules and necrotic patches in the lungs. In these cases death occurs generally in from four to seven or nine days (rarely earlier than four or later than nine days), provided the infecting material be of a moderate degree of virulence, such, for instance, as on subcutaneous injection causes death in three to four days, without the above necrotic changes. (Professor Klein has elsewhere pointed out that there exists in respect of cutaneous inoculation a marked difference of reaction between the guinea-pig and the rat; in the latter animal cutaneous inoculation is the most reliable way of causing acute plague with fatal issue in two to three days.)

Examining sections of the organs containing the necrotic nodules and necrotic patches of guinea-pigs dead of subacute plague, it is seen that while the central parts of the necrotic nodules are crowded with B. pestis, the peripheral portions (except their vessels), although quite broken down into dead débris, contain few, if any, bacilli. From this it may be inferred that, as is the case in other bacterial diseases associated with necrotic changes of the tissues, such necrosis is not caused by the mere presence of the bacilli themselves but by the toxin produced by them. As an illustration may be mentioned the necrotic action of the diphtheria toxin on a mucous membrane.

In view of the above two considerations I determined to inject into a series of animals the dried organs (containing organ-toxin and dead bacilli) of various rodents dead of plague with the purpose of ascertaining the ability of these materials to protect similar rodents against subsequent infection with virulent B. pestis.

A considerable number of experiments and observations were in the first instance made by me in order to ascertain the best mode of preparing and preserving prophylactic material of this nature, as well as to determine which portions of the body of an animal dead of plague are the most efficacious for the purpose. It is not necessary to describe in detail here all the steps adopted; they comprised experiments with: (*a*) dried material of all the organs of mice, of guinea-pigs, and of rats dead of acute virulent plague; (*b*) dried material of the bubo and spleen alone of mice, guinea-pigs, and rats dead of acute plague; (*c*) dried material of all the organs of guinea-pigs dead of subacute plague—i.e., of guinea-pigs in which death occurred after four or five days with necrosis of the bubo, necrotic nodules of the spleen, liver, and lungs; and (*d*) dried material of those organs alone which showed necrotic changes—that is, bubo, spleen, lungs, and liver of guinea-pigs dead of subacute plague. These several materials were dried:—(*e*) at the temperature of the laboratory over sulphuric acid; (*f*) at the temperature of 20° C. over sulphuric acid; (*g*) at the temperature of 37° C. over sulphuric acid; and (*h*) at the temperature of 46–47° C. over sulphuric acid.

The result of these experiments showed that a variety of tissues—the bubo, the enlarged spleen, and the affected lung containing abundance of necrotic masses, as also the liver when it contains abundance of necrotic nodules—of guinea-pigs dead of subacute plague (i.e., dead after five and nine days), cut out and finely minced aseptically, spread out in thin layers in sterile glass plate dishes and dried over sulphuric acid at 46–47° C., yield a material which not only can be very easily and rapidly prepared but which is of a uniform and reliable efficacy, and in every way, indeed, superior to any of the other prophylactics.

The guinea-pig, as compared with the rat, being a "clean" animal, appears greatly preferable for the above purpose. There is no difficulty in preparing and preserving the above necrotic organs, which yield comparatively the greatest amount of material, in a clean manner, and the exposure to 46° C. prevents growth and multiplication in them of any stray or accidental bacteria. A guinea-pig of about 300–400 grammes weight will yield five to seven grammes of dry powder prepared from the bubo, spleen, lungs, and liver, and as the reliably protective dose for an adult rat (see below) is 10–15 milligrammes, it follows, therefore, that one large guinea-pig can yield about 400–600 doses. Three days' drying in thin layers over sulphuric acid at 46° C. was found more than sufficient to devitalise all B. pestis contained in these organs. After three days' drying the dry scales of material are rubbed down to a fine powder in a sterile mortar; this powder is then transferred to a sterile wide-mouthed bottle, plugged with sterile cotton wool, which is placed for two to three days at 37° C. in order to thoroughly complete the process of drying. At the end of these three additional days the cotton-wool plug is replaced by a glass stopper and the prophylactic is ready for use. It can be thus preserved indefinitely in a dry state by a layer of paraffin over the stopper. Such material tested by cultivation is found sterile; it yields no growth of any kind.

In preparing the prophylactic for use the desired amount of powder is weighed out, well rubbed down in a desired amount of sterile warm distilled water, and the turbid emulsion thus obtained is injected subcutaneously. The principal consideration is, of course, the amount of dry powder, the amount of water used per dose is immaterial. I generally use ½ c.c. of water per dose, but there is no reason why ¼ c.c. or 1 c.c. should not be used.

As I have indicated, the material contains not only the acutely active toxin but also the dead bodies of all the bacilli pestis originally present in large numbers in the necrotic organs (bubo, spleen, liver, and lungs), with addition probably of other substances of an undetermined nature and action. That the prophylactic efficacy of the material is not solely due to the bacillary bodies (known to possess both toxic and prophylactic action) retained after drying, can be gathered from the fact that an amount of dead bacilli from culture considerably larger than the quantity contained, say, in 10 milligrammes of dry spleen material, possesses neither the same toxic nor equal immunising efficacy as the latter. For instance, 5 c.c. of Haffkine prophylactic strongly turbid with flakes and masses of bacilli does not confer immunity on an adult rat; 10 c.c. is the required dose. On the other hand, 10–15 milligrammes of the dry powder above referred to does confer immunity on the adult rat.

I now summarise the results obtained by using the above described dried material in a large number of experiments, comprising several dozen white mice, five to six dozen guinea-pigs, and considerably over 150 rats, chiefly white.

1. The above prophylactic kills a large percentage of mice within 20–24 hours in doses of 1–5 milligrammes.

2. It kills a percentage (12–25) of half-grown white rats in doses of 5–8 milligrammes, if the material is derived from acute virulent cases; but if obtained from the necrotic organs of guinea-pigs dead of subacute plague (death 5–9 days) as much as 10–12 milligrammes are required for fatal effect. The dead animals show local swelling, with

œdema and punctiform hæmorrhages; the spleen is enlarged, the lungs congested. No bacilli pestis are, however, to be found in their bodies anywhere.

3. Even as much as 20 milligrammes fails to kill a guinea-pig of 200–300 grammes weight.

4. An adult rat (weighing 120–200 grammes) injected with 10–15 milligrammes of the prophylactic of medium virulence such as I recommend, or with two doses of 10 milligrammes each at an interval of 9–10 days, is secured complete protection against even the most virulent B. pestis. I have a considerable number of rats which, after injection with the prophylactic, were tested by cutaneous inoculation (the most successful mode of infection of the rat) with virulent B. pestis at various periods from one to 13 weeks. These were all found fully protected, whereas the control animals inoculated cutaneously at the same time and with the same material died from typical acute plague in 36 to 72 hours.

5. As is well known, guinea-pigs are less susceptible to plague than white rats, the latter being of all the rat species which I have experimented with the most susceptible to plague. In the case of the guinea-pig a dose of 20 milligrammes of the prophylactic now in question twice injected at intervals of 10–14 days does not afford protection in more than 50 per cent. of the animals; the remainder die, on subsequent injection with virulent material of plague, though their death is delayed several days (death in 9–12 days or later) and they show in the great majority of instances suppurating bubo. The disease induced in these animals differs, however, from the subacute plague in an unprotected (control) guinea-pig as follows:—(*a*) There is but slight enlargement of the spleen, with few necrotic nodules; (*b*) the liver contains either no necrotic nodules, or such nodules only very sparingly; (*c*) there is scarcity of B. pestis in the bubo and in the spleen—in unprotected guinea-pigs dead of subacute plague these two tissues being crowded with B. pestis; and (*d*) there is much greater amount of necrosis in the lungs, the necrotic parts being packed with B. pestis. It seems, therefore, that while in the unprotected guinea-pig the bubo, spleen, and liver are more involved and richer in B. pestis than in the protected guinea-pig, the reverse is the case as regards the lungs.

In the experiments which in 1899 I along with Dr. Haffkine made with his prophylactic, and in the experiments which I have repeatedly made since with Haffkine prophylactic as prepared by myself, it was shown that for an adult rat 10 c.c. are required to insure protection; an amount which represents, according to the statistics in India and elsewhere, at least double that required for protection of an adult human being. I assume, therefore, that 5–7 milligrammes of the dry prophylactic would suffice as a dose for the human subject. On this estimate a single large guinea-pig, dead of subacute plague, would by means of its necrotic bubo, spleen, liver, and lungs, yield something like 800–1000 human doses of the new prophylactic, an amount of protective material equal to 3–5 litres of Haffkine's fluid.

When it is borne in mind: (1) that this dried prophylactic does not require more than about 10–18 days for its preparation—Haffkine's requires 4–6 weeks; (2) that a large amount can be prepared of uniform strength; (3) that its efficacy is easily standardised by injection into the rat; (4) that, being dry and sterile, it can be preserved without any antiseptic and unaltered for any length of time; and (5) that the protection afforded by its injection into the rat is of considerable duration, certainly many weeks; and last, but not least, that the cost of preparation is incomparably smaller, the superiority of this *organ-prophylactic* to Haffkine's prophylactic must be obvious.

As regards size of dose, it is true that the prophylactic prepared by Calmette and the Paris Pasteur Institute, which is an emulsion of dead bacilli derived from agar surface, is capable of protecting an adult white rat in doses so small as 1–2 c.c. But here again different cultures cannot be relied upon as being of equal potency, and hence no uniformity can be insured for different sets of cultures, or for the matter of that for two separate cultures from the same source; whereas greater uniformity is to be anticipated from material derived from the same breed of guinea-pigs, all animals being of about the same weight and inoculated with material of like activity.

Professor Klein concludes his interesting report by asking the important question, Whence is derived the especial efficacy of the new prophylactic, which contains, be it remembered, not only the dead bodies of plague bacilli and associated tissue-toxin, but also, in all probability, other tissue constituents? In this connexion he admits that he has not as yet made more than preliminary experiment. But he has ascertained that the clear filtrate from a watery emulsion of the prophylactic powder possesses undoubted prophylactic efficacy. Thus, injection of an amount of clear filtrate corresponding to—i.e., obtained from—20 milligrammes of dry powder, confers immunity on the adult rat against a subsequent cutaneous infection with virulent bacillus pestis. This, he concludes, shows that the new prophylactic does not act solely by means of the bodies of the dead bacilli which it contains. A forthcoming report from the principal medical officer of the Local Government Board will deal fully with the steps adopted by Professor Klein in conducting his experiments.

MEDICINE AND THE LAW.

Information asked for by Coroners from Medical Men.

AT a recent inquest at Wandsworth a discussion took place between the coroner, Mr. Troutbeck, and a medical witness as the result of the latter having refused to give a certificate of the cause of death and having also declined to give any information as to his opinions on the subject to the coroner's officer. The deceased, a woman more than 80 years of age, had suffered from bronchitis and the medical man called as a witness by the coroner expressed the opinion in the witness-box that death was due to heart failure following upon this and upon some of the changes of old age. He had refused his certificate because he had heard that the old woman within three months of her decease had had a struggle with a boy in her shop which had resulted in her falling to the ground and because he considered that this might have contributed to her condition afterwards observed by him. The question of the fall does not seem to have been gone into at the inquest, at which a verdict of death from natural causes was returned, and some observations were made by Mr. Troutbeck, both when the medical witness was in the box and later during his summing up upon that gentleman's refusal to give information to the coroner's officer, the result of which might have been that no inquest would have been held. This is an old question between coroners and medical men. The former are required by the law to hold inquests where it is suspected that a patient "has died either a violent or an unnatural death or has died a sudden death of which the cause is unknown," and in order to ascertain whether such conditions prevail they naturally seek for information from any medical man who appears likely to be able to give an opinion on the subject. The medical man, on the other hand, naturally objects to what appears to him to be a responsibility thrust upon him and to communicating to a coroner's officer views which may reach the coroner himself in a distorted form. He receives no fee for this opinion, and if subsequent events show that he was wrong he may be blamed for an error which he has no opportunity to correct without post-mortem examination or a fuller knowledge of the circumstances preceding and accompanying death, such as an inquest may possibly afford. These observations apply generally to such cases of the kind indicated as may arise outside Mr. Troutbeck's district. The attitude of that gentleman towards medical practitioners in the locality in which his jurisdiction lies has not been such as to obtain from them any coöperation in the performance of his duties which he has not the power to compel.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY meeting of the Council was held on Jan. 11th, Mr. JOHN TWEEDY, the President, being in the chair.

Mr. W. BRUCE CLARKE was introduced and having made a declaration in the terms of the oath prescribed by the Charter of 1800 was admitted a member of the Court of Examiners.

It was resolved to amend the list of universities whose graduates in medicine and surgery may present themselves for examination for the Fellowship without first becoming Members of the College, by the substitution of Victoria University of Manchester for Victoria University, and by the addition of the Universities of Liverpool, Leeds, and Sheffield.

Mr. G. H. Makins was appointed a member of the Board of Examiners in Dental Surgery in the vacancy occasioned by the retirement of Mr. W. H. A. Jacobson.

The PRESIDENT announced that he had appointed Mr. Henry T. Butlin as Hunterian Orator for the year 1907.

Mr. A. W. Mayo Robson was appointed the representative of the College at the Fifteenth International Congress of Medicine to be held at Lisbon next April.

THE MEDICAL MAN, THE CORONER, AND THE PATHOLOGIST.

THE first stage has been reached and passed in the proceedings undertaken by the British Medical Association in order to test the legality of the employment by Mr. Troutbeck of Dr. L. Freyberger to hold post-mortem examinations in all, or practically in all, cases coming before him as coroner in the south western district of London. The controversy with regard to this unusual practice resorted to by a particular coroner has gone on for so long and

has been discussed and commented upon so frequently in THE LANCET that the facts relating to it are familiar to all our readers. It has been our contention throughout that if the coroner's procedure were as inconsistent with a correct interpretation of the law as it seemed to us undesirable in the public interest and from a medical point of view there was an effective way of raising the question of its legality and of obtaining an authoritative decision upon the subject and the course which we thus advocated has been adopted. The 21st Section of the Coroners Act, 1887, which governs the calling of medical witnesses at inquests, provides that—

1. Where it appears to the coroner that the deceased was attended at his death or during his last illness by any legally qualified medical practitioner the coroner may summon such practitioner as a witness, but if it appears to the coroner that the deceased person was not attended at his death or during his last illness by any legally qualified medical practitioner the coroner may summon any legally qualified medical practitioner who is at the time in actual practice in or near the place where the death happened, and any such medical witness as is summoned in pursuance of this section may be asked to give evidence as to how, in his opinion, the deceased came to his death. 2. The coroner may, either in his summons for the attendance of such medical witness or at any time between the issuing of that summons and the end of the inquest, direct such medical witness to make a post-mortem examination of the deceased, with or without an analysis of the contents of the stomach or intestines.

A third sub-section provides that a medical man as to whom there is evidence given upon oath that he has treated the deceased improperly or negligently shall not be allowed to take part in the post-mortem examination; and a fourth subsection enables the jury, if they are of opinion that the cause of death has not been satisfactorily explained by the medical or other witnesses brought before them, to require that some other witness shall be summoned, and that he shall make a post-mortem examination. This witness they are to name in their requisition which they are to make in writing and the coroner is to do as he is desired to do or to be guilty of a misdemeanour. The section following that above cited provides for the payment of fees of one guinea for evidence given, or of two guineas if a post-mortem examination has been held in accordance with the coroner's direction, to "a legally qualified medical practitioner who has attended at a coroner's inquest in obedience to a summons of the coroner under this Act."

Having taken these sections into consideration, and being of opinion that the payments made to Dr. Freyberger for post-mortem examinations were not sanctioned by the Coroners Act, 1887, when there were local medical men who might have been employed, we suggested that the auditors should be called upon to disallow them. This has now been done, the British Medical Association as ratepayers interested in the London County Council's disbursements raising the point and supporting its contention with argument before Mr. T. B. Cockerton, the Local Government Board's auditor.

The decision of this gentleman has now been given. It is adverse to the British Medical Association and upholds the practice of Mr. Troutbeck, allowing the fees objected to, but there is, of course, nothing surprising or unreasonable in this. The auditor must be deemed to have considered the question before during the years which have elapsed since the employment of Dr. Freyberger began and although he may not have had the advantage of the arguments of counsel hitherto he has probably not treated the matter without consideration.

In the above circumstances it will be more interesting to see whether ultimately Mr. Cockerton will be held to have been right and it is to be presumed that in due course the matter will go further. Pending an appeal it must be treated by us as *sub judice* and we will do no more than point out that the decision as given implies that in the auditor's opinion a coroner is entitled to summon or to omit to summon any medical men as he pleases to give evidence at an inquest and to intrust post-mortem examinations to those whom he may choose, unfettered by an Act of Parliament which in the sections referred to seems, upon the face of it, to impose limitations upon his discretion. The cases to which attention has now been called include:—1. Those in which the medical man in attendance on the deceased before his death gave evidence before the coroner but was not directed to make any post-mortem examination. 2. Cases in which the medical man in attendance on the deceased during lifetime was neither summoned as a witness nor gave any evidence at all. 3. Cases in which no medical man was engaged in attendance on the deceased either before or at or immediately after his death and in which the coroner did not summon a medical practitioner in actual practice in or near the place where death happened. 4. Cases in which a medical man was requested to make a post-mortem examination and to give evidence, but although the jury made no application under Section 21 of the Coroners Act, 1887, Dr. Freyberger was engaged to assist at the post-mortem examination. In all these instances the payments made were allowed.

It is to be observed that when giving his decision Mr. Cockerton added: "I desire to express my sympathy with those members of the medical profession who are affected by Mr. Troutbeck's general mode of procedure and I propose to refer to the matter in the report which I shall make to the Council at the close of the audit," so that he must be taken to have considered the matter strictly in its legal aspects, and the report thus mentioned will be awaited with interest, as will also be the statement of the auditor's reasons for his decision, which he will give in writing in the prescribed manner when desired to do so by one of the parties interested. These reasons will become known in the event of an appeal taking place. It has been stated in the newspapers that this will in the first instance be to the Local Government Board, but it is with the judges of the High Court of Justice, so far as we are aware, that the decision must ultimately rest should a final pronouncement of the law be sought for. The procedure to be adopted must, however, be left to the legal advisers of the parties affected.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On the Water-supply of the Holderness Portion of the East Riding, by Dr. S. W. WHEATON and Mr. E. A. S. FAWCETT.[1]—In this report of a joint inquiry by a medical and an engineering inspector of the Local Government Board several interesting facts are recorded regarding the geology of a large portion of the East Riding of Yorkshire, immediately to the north of the Humber, and the condition of its various small towns and villages in respect to water-supply. Holderness, the area in question, is a flat stretch of land between the base of the chalk Wolds on the one side and the North Sea and the Humber on the other. In one portion, at the foot of the hills, the chalk is covered by a considerable thickness of boulder clay, gravel, and other glacial deposits, overlain by alluvium. This includes the district about the borough of Beverley known as the Carrs. Between the Carrs and the sea and Humber is a low undulating tract consisting mainly of boulder clay with mounds of gravel and sand rising above the general level and also "warp land," which consists of absolutely flat stretches of land reclaimed from the mud flats of the Humber by the process of "warping," which has resulted in the formation of a stiff impervious clay from four to 30 feet in thickness. The dip of the chalk in the Wolds is to the south-east and chalk underlies practically the whole area of Holderness. Nevertheless, in many parts deep borings into the chalk are useless for the purposes of water-supply. This is specially the case to the east where the chalk is farther from the surface and yields water uncertain in quantity and with almost prohibitive amounts of total solids and salt. In other parts of the area, nearer to the Wolds, the supply which can be obtained from the chalk is abundant. The town of Hull is supplied in this way from wells at Cottingham and Springhead. A new proposal to supplement the Hull supply by pumping at Newington is also referred to by the inspectors, who point out that care must be taken to protect a number of springs in the locality which, though now yielding water, would probably, as a result of pumping, become places at which suction into the pump well would occur. The need for exceptional precautions in the case of water derived from the chalk in this neighbourhood has been illustrated more than once by outbreaks of enteric fever at Beverley which have been attributed to the public

[1] London, Wyman and Sons, Fetter-lane; Edinburgh, Oliver and Boyd; and Dublin, E. Ponsonby. Price 9d.

water-supply of that town. Taking Holderness as a whole, a large number of villages are without any public supply of water and have to depend on shallow wells liable to dangerous pollution and inadequate in their yield. Among places noted in the report as in most urgent need of a supply of water are Withernsea, where "there is really no safely potable water"; Hornsea, where water from local chalk wells "has a distinct briny taste and which in warm weather contains living organisms large enough to be visible to the unaided eye"; Hedon, where "the supplies in use are contaminated to a high degree and can never be made safe for use"; Preston, and several other villages. It is quite evident, in view of the geological character and sanitary condition of this area, that the case is one for combined action. Some of the sanitary authorities concerned are eager to obtain a good supply of water and willing to pay a reasonable price for the benefit, others are lukewarm in the matter, while certain authorities appear to be opposed strongly to incurring any expense in this direction. Dr. Wheaton and Mr. Fawcett describe two schemes which would meet the requirements of a large part of the locality in question. One scheme is to obtain the supply from the corporation of Hull by laying a trunk main from the Hull waterworks; the other is to obtain an independent supply from the Wolds near Arram and this would have the advantage of enabling a larger population to be supplied than is proposed by the Hull scheme. The probable cost is set out in each case. The Arram scheme is thought to be the cheaper. The cost at 30 gallons per head is estimated as covered by a rate of rather less than 1*s.* 5½*d.* on the annual assessable value of the area supplied. If, however, the expense were defrayed by special water charges the entire cost of the scheme would be met by charges equal to about 7½*d.* per 1000 gallons.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

County of Durham.—Dr. T. Eustace Hill does a useful service by incorporating with the report on the sanitary condition of the county of Durham in 1904, recently issued, the address on infantile mortality which he gave to the Northern branch of the Society of Medical Officers of Health in February last. The results of his comparison between the records of mortality for Durham and those of "urban" and "rural" counties of England and Wales are instructive in many respects. The infant mortality of the administrative county (which does not include the large centres of Gateshead, Sunderland, and South Shields) has shown no diminution during the past 15 years. For 1904 it was 161 per 1000 births. The birth-rate has, however, been maintained at a higher level than in most counties. Dr. Hill has analysed the causes of infant mortality in the county for the five years 1894–98 and compares the results with the data for England and Wales supplied to the Committee on Physical Deterioration by Dr. J. F. W. Tatham. The Durham figures compare favourably with other "urban" counties as regards the mortality from diarrhœal diseases, bronchitis and pneumonia, and infectious diseases. On the other hand, the Durham mortality from "atrophy," "debility," and atelectasis is much higher, while the same remark applies in less degree to premature birth, convulsions, meningitis, teething, and tuberculous diseases. The share of illegitimacy in producing the high infant mortality appears to have been small. Overcrowding in dwellings, however, has diminished to a less degree in this county than elsewhere and has increased in the coal-mining districts. The infant mortality is high, notwithstanding the fact that the proportion of women engaged in industrial occupations is small. Dr. Hill concludes that improper feeding and want of attention to children are the principal causes at work—a conclusion which few will dispute who are acquainted with the ways of the inhabitants of colliery villages in Durham. He draws special attention to the general practice of making condensed milk—sometimes condensed skim milk—the chief food of hand-fed infants of the working classes during the first few months of life. He insists also that apart from wrong feeding the neglect of infants, owing to ignorance and indifference, largely influences mortality and strongly urges the advantages of dealing with these matters by means of properly qualified women health visitors. The Durham county council has made a beginning by appointing two ladies to act as health visitors and inspectors of midwives, and Dr. Hill urges an extension of the system. He points also to the good which can be effected by the medical profession in dispelling the ignorance which exists as to infant feeding and management. Dr. Hill advocates the prohibition of advertisements of abortifacients and suggests that the prejudicial effect on the infant where attempts to produce miscarriage have been made and failed may often be a serious matter.

County of Hertford.—It is noteworthy that in this county the recent increase of artisan population consequent on the removal of large works from London has been so considerable as materially to affect calculations of its present population. Hertfordshire in 1904, as in former years, showed a low rate of infantile mortality—106 per 1000—by comparison with other counties of England and Wales. On the subject of pulmonary tuberculosis Dr. F. E. Fremantle points out that little use has been made of the voluntary notification adopted by the districts of Harpenden, East Barnet Valley, and St. Albans. From these districts only three notifications were received in 1901 and 1902, none in 1903, and only one in 1904. This may be used as an argument for making such notification compulsory, but, on the other hand, it may be asked what preparation these districts had made to deal with notified cases. Until a definite and satisfactory scheme for dealing with individual cases of the disease in order to minimise the risk of infection and to increase the chance of recovery of the patient has been formulated the advantage to be obtained from notification, voluntary or other, is frequently unappreciated by medical practitioners and their patients. In many directions, to judge from this report, sanitary authorities in Hertfordshire are by no means overzealous in their public health duties. It is quite time that an important district like Cheshunt was provided with an isolation hospital and a disinfecting apparatus. Dr. Fremantle discusses in detail water-supply and sewerage arrangements in the county and points to risks to which certain public water-supplies derived from wells in the chalk appear to be exposed, in particular that of Harpenden. The account of local administration regarding dairies and cowsheds in the county generally is by no means favourable. It is satisfactory, however, that a veterinary surgeon has been appointed for the urban and rural districts of St. Albans to make periodical inspection of the cowsheds and that experience has amply justified the appointment.

Report on the Epidemic of Small-pox in Newcastle-on-Tyne from March, 1903, to September, 1905.—Dr. H. E. Armstrong furnishes various interesting details regarding the 614 cases of small-pox in Newcastle which were notified during the above period. All these cases, with very few exceptions, were isolated in the city small-pox hospital. The number of small-pox patients who were stated to have been revaccinated successfully at some time or other before their infection was six. As usual the cases which had been once vaccinated contrast as regards age distribution with the unvaccinated cases. In the vaccinated class (judging by cicatrices) 39 out of 463 cases were under the age of 15 years; in the unvaccinated class 72 out of 124 cases were below that age. The case mortality rate of the unvaccinated of all ages was 10·1 per cent. Two adult patients had previously suffered from small-pox. No case of small-pox occurred among the 65 members of the sanitary, nursing, and ambulance staff who were brought more or less directly into daily contact with infection; revaccination in the case of all these persons was specially attended to. Several local outbreaks in Newcastle were traced to mild and unsuspected cases where the persons affected had for weeks been going about in an infectious state. Dr. Armstrong has on other occasions brought into prominence the part played by vagrants and hawkers in causing the dissemination of small-pox up and down the country and in the present epidemic he found many instances of local spread of the disease referable to persons of this class. In other instances the disease was traced to common lodging-houses, laundries, factories, workshops, and the like. Thoroughness is so universally associated with methods of sanitary administration in Newcastle that it is hardly necessary to refer to the great efforts which have been made by Dr. Armstrong and his staff during the three years in question to keep the epidemic under control. The methods employed, which included routine isolation of "contacts," notification to employers of labour, free inter-communication with other districts, and vaccination arrangements specially made by the town council in addition to those of the Poor-law authorities, must have entailed an enormous amount of labour. The special cost of

the epidemic, so far as the town council is concerned, is reckoned by Dr. Armstrong as approximately £12,500. Of this sum as much as £2603 was expended in lodging and isolating "contacts," while a further sum of £1584 was paid in compensation to "contacts" for loss of wages whilst detained in the establishment reserved for their isolation. The necessity of this large expenditure on "contacts" will of course be questioned by many who hold that in ordinary cases it is usually sufficient to let a "contact" go about his business after suitable precautions have been taken in the way of vaccination and disinfection and merely to keep him under close daily observation about the time when the first symptoms of small-pox are likely to declare themselves. Out of a total of 2551 "contacts" isolated at Newcastle small-pox developed in 86, or 3·6 per cent. Dr. Armstrong is of opinion that if these 86 persons had been allowed to remain at home and to go about their ordinary avocations there can be no reasonable question as to the large spread of infection to which they would have given rise. On the other hand, it may be said that if ordinary methods of daily observation at their homes had been substituted for routine isolation of "contacts" a large proportion of these 86 cases might have been detected at a quite early stage and dealt with in such a way that little or no further spread of the disease would have been occasioned by them.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 9193 births and 5052 deaths were registered during the week ending Jan. 13th. The annual rate of mortality in these towns, which had been 17·8, 17·4, and 18·3 per 1000 in the three preceding weeks, declined again last week to 16·7 per 1000. In London the death-rate was 17·5 per 1000, while it averaged 16·3 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 6·1 in Northampton, 7·8 in Hornsey, 9·7 in Wallasey, 10·1 in Leyton and in Derby, 10·3 in Walthamstow, 10·7 in West Hartlepool, and 10·9 in Stockton-on-Tees; while the highest rates were 21·1 in South Shields, 21·2 in Liverpool, 21·3 in Sunderland, 22·0 in Preston, 22·1 in West Bromwich, 22·2 in Tynemouth, 23·5 in St. Helens, 24·3 in Merthyr Tydfil, and 25·9 in Burnley. The 5052 deaths in these towns last week included 389 which were referred to the principal infectious diseases, against 439, 405, and 464 in the three preceding weeks; of these 389 deaths, 124 resulted from measles, 101 from whooping-cough, 66 from diphtheria, 42 from scarlet fever, 39 from diarrhœa, and 17 from "fever" (principally enteric), but not any from small-pox. In Tottenham, Brighton, Southampton, Wigan, Halifax, York, and 12 other smaller towns no deaths from any of the principal infectious diseases were registered last week; among the other towns the highest death-rates from these diseases were recorded in East Ham, Plymouth, Handsworth (Staffs.), Smethwick, Leicester, Bury, Preston, Barrow-in-Furness, and Leeds. The greatest proportional mortality from measles occurred in Willesden, Bury, Blackburn, Preston, Leeds, Gateshead, and Swansea; from diphtheria in Norwich, Barrow-in-Furness, and Merthyr Tydfil; from whooping-cough in Reading, Plymouth, Handsworth (Staffs.), Smethwick, Leicester, and Huddersfield; and from diarrhœa in Blackburn. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. No death from small-pox was registered last week in any of the large towns and no cases of this disease were under treatment last week in the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 3409, 3446, and 3299 at the end of the three preceding weeks, had further declined to 3062 at the end of last week; 257 new cases were admitted during the week, against 295, 295, and 291 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 516, 426, and 454 in the three preceding weeks, declined again last week to 370 but were 17 above the corrected average number in the corresponding periods of the four preceding years. The causes of 63, or 1·2 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Leicester, Nottingham, Salford, Bradford, Leeds, Hull, and 44 other smaller towns; the largest proportions of uncertified deaths were registered in Reading, West Bromwich, Birmingham, Coventry, Liverpool, St. Helens, Warrington, Preston, Sheffield, Sunderland, and South Shields.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 17·4, 18·2, and 19·8 per 1000 in the three preceding weeks, declined again to 17·8 per 1000 during the week ending Jan. 13th, but was 1·1 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 11·4 in Paisley and 11·6 in Aberdeen to 19·2 in Greenock and 24·4 in Dundee. The 610 deaths in these towns included 28 which were referred to measles, 16 to diarrhœa, eight to diphtheria, five to whooping-cough, two to scarlet fever, and two to "fever." In all, 61 deaths resulted from these principal infectious diseases last week, against 83, 65, and 80, in the three preceding weeks. These 61 deaths were equal to an annual rate of 1·8 per 1000, which was 0·5 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of measles, which had been 43, 25, and 33 in the three preceding weeks, declined again last week to 28, of which 20 occurred in Glasgow, five in Dundee, and two in Paisley. The deaths from diarrhœa, which had been 15, 14, and 20 in the three preceding weeks, declined again to 16 last week, and included nine in Glasgow, three in Edinburgh, and three in Dundee. The fatal cases of diphtheria, which had been 11, 12, and 13 in the three preceding weeks, declined again last week to eight, of which four were registered in Glasgow and two in Edinburgh. The deaths from whooping-cough, which had been nine, seven, and 11 in the three preceding weeks, declined again to five last week, and included two in Leith. The fatal cases of scarlet fever, which had been one, three, and two in the three preceding weeks, were again two last week, and were both recorded in Greenock. The deaths from "fever," which had been four, four, and one in the three preceding weeks, rose to two last week, both of which were registered in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 130, 99, and 136 in the three preceding weeks, declined again to 126 last week, were 57 below the number in the corresponding period of last year. The causes of 19, or more than 3 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 22·3, 17·9, and 21·7 per 1000 in the three preceding weeks, was again to 21·7 per 1000 during the week ending Jan. 13th. During the past four weeks the death-rate has averaged 20·9 per 1000, the rates during the same period being 18·5 in London and 16·4 in Edinburgh. The 158 deaths of persons belonging to Dublin registered last week corresponded with the number in the preceding week and included seven which were referred to the principal infectious diseases, against six, seven, and six in the three preceding weeks; of these, three resulted from whooping-cough, two from scarlet fever, one from diphtheria, and one from diarrhœa, but not any from small-pox, measles, or "fever." These seven deaths were equal to an annual rate of 1·0 per 1000, the death-rates last week from the principal infectious diseases being 1·4 in London and 1·1 in Edinburgh. The fatal cases of whooping-cough, which had been one in each of the three preceding weeks, rose last week to three. The 158 deaths in Dublin last week included 31 of children under one year of age and 35 of persons aged 60 years and upwards; the deaths of infants were considerably in excess of the number in the preceding week, while those of elderly persons showed a slight decline. Three inquest cases and three deaths from violence were recorded, and 62, or nearly two-fifths, of the deaths occurred in public institutions. The causes of five, or more than 3 per cent., of the deaths registered in Dublin last week were not certified.

HOSPITAL SATURDAY AT PLYMOUTH.—Further additions have been made to the Hospital Saturday Fund at Plymouth, making a total of £631 for the year 1905.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet Surgeon John Lowney has been placed on the Retired List at his own request (dated Jan. 12th, 1906).

The following appointments are notified:—Fleet Surgeons: G. Wilson to the *Nelson*; T. Austen to the *Albemarle*; and G. A. Waters to the *Russillies*. Staff Surgeons: T. W. Philip to the *Iphigenia* and S. Roach to the *Cormorant*, for Ascension. Surgeons: J. Macdonald to the *Ringdove*; L. C. E. Murphy to the *Vivid*; A. C. W. Newport to the *Victory*; F. F. Lobb to the *Albemarle*; A. J. Wernet to the *Cambridge*; and F. E. McCune to the *Berwick*.

ARMY MEDICAL STAFF.

Colonel William B. Slaughter, from the Royal Army Medical Corps, to be Surgeon-General, vice W. F. Burnett, retired (dated June 21st, 1905). Colonel William S. Pratt, from the Royal Army Medical Corps, to be Surgeon-General, vice J. A. Clery, C.B., placed on temporary half-pay (dated Dec. 29th, 1905).

ROYAL ARMY MEDICAL CORPS.

The undermentioned Lieutenant-Colonels to be Colonels: Charles Seymour, vice W. B. Slaughter, promoted (dated June 21st, 1905); George W. Robinson, vice C. Seymour, seconded (dated June 21st, 1905); Arthur W. P. Inman, vice W. E. Webb, retired (dated July 22nd, 1905); Thomas M. Corker, vice G. A. Hughes, D.S.O., retired (dated August 28th, 1905); Charles A. Webb, vice C. H. Swayne, D.S.O., retired (dated Sept. 18th, 1905); Henry Martin, vice A. W. Duke, retired (dated Dec. 18th, 1905); and Arthur E. J. Croly, vice W. S. Pratt, promoted (dated Dec. 29th, 1905). The undermentioned Lieutenants from the Seconded List to be Lieutenants: Cecil J. Wyatt (dated Jan. 1st, 1906) and Robertson S. Smyth (dated Jan. 2nd, 1906).

THE MEDICAL SERVICE IN THE TIBET MISSION.

Lieutenant-Colonel L. A. Waddell, C.B., C.I.E., I.M.S., who was principal medical officer to the Tibet mission force in 1903-04, in the medical report of that mission states that the unusual difficulties of transport compelled a reduction in the weight of the equipment of the field hospitals. This was reduced by one-fourth its weight by eliminating non-essential articles, with a gain in efficiency. The unprecedented physical difficulties of transport over the steep mountain tracts and in such high altitudes necessitated several modifications in the ambulance for the transport of the sick. As the Indian *kahars* were manifestly unsuited for this work and had proved on the Khamba Jong line almost incapable of carrying a loaded *dooly* above 8000 feet amongst the hills, they were replaced by several hundred hardy Tibetan and Sikkimese *dandywalas* from Darjeeling, temporarily enlisted for this purpose. These were quite undisciplined and had to be trained to their duties. The Sikkimese proved a failure, nearly all of them deserting after the first few days. The Tibetans, on the other hand, were an undoubted success on the whole, for although about 70 per cent. of them deserted within the first few months through fear of our defeat by their kinsmen those who remained and a batch of Garhwalis recruited at Naini Tal did practically all the carrying of sick and wounded in the fighting force at the front. The form of the regulation *dooly* and stretcher proved most unsuitable for work in these hilly regions. The ordinary regulation *dooly* was so heavy and cumbersome that it could not be carried even in an empty state up many of the steep tracts but had to be unshipped and carried up in pieces, and at sharp turns and zigzags it was positively dangerous to its occupant and bearers. It was thus practically useless for continuous transport in the hills and too heavy for transport on the high plateaus. Two Amesbury *doolies* were tried experimentally and proved to be a vast improvement over the ordinary *dooly* in lightness, manageability, and handiness, and comfort for the patient. Blanket stretchers were also found to be quite useless for steep hill transport and dangerous to the patient, as no manner of tying him in could prevent his slipping out. For the steeper passes several ambulance chairs were constructed by Lieutenant-Colonel Waddell to be carried on men's backs on the framework on which the Tibetans are accustomed to carry their own loads, and they proved of service. Latterly, the hammock devised by Major A. R. Aldridge, R.A.M.C., was used with much success.

THE NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund held on Jan. 9th, Sir J. Dick, K.C.B., in the chair, the sum of £85 was distributed among the several applicants.

THE SEAMAN'S UNIFORM IN THE ROYAL NAVY.

Our contemporary the *Daily Graphic* having ridiculed a proposed seaman's uniform, Dr. Stanley L. Haynes has written to that journal protesting against the editor's treatment of a subject which certainly deserves sober consideration. Dr. Haynes says: "It is well known that the present uniform of our seamen in the Royal Navy affords insufficient protection to their chests and that they consequently are unnecessarily prone to consumption, pneumonia, and other preventable diseases. The proposed tunic would not be too close or too tightly 'buttoned up to the neck.' Our soldiers have plenty of neck room and do their drill quite as well as sailors. The 'trousers of modern cut' would be an immense improvement on the ridiculous and uncomfortable 'bell-mouthed garments' now disfiguring our men, 'tight where they ought to be loose, and loose where they ought to be tight'; we can no more expect our tars to 'enjoy' their present garments than our soldiers do their Brodrick tam-o'-shanters. The 'steward's peaked cap' is also a much-needed improvement over the flat cap now worn which gives no protection to the eyes while on the look-out nor when laying a gun. Our naval officers wear peaked caps; why not our seamen?"

THE ROYAL NAVAL HOSPITAL, STONEHOUSE (PLYMOUTH).

The whole of the staff at the Royal Naval Hospital, Stonehouse, has been revaccinated. The superintending civil engineer of Devonport Dockyard (acting upon the advice of Inspector-General J. C. B. Maclean, R.N., commanding the Royal Naval Hospital) has recommended the men employed under his department in the establishment to be revaccinated. The men in question, numbering about 100, belong to what is called the outside staff, and reside in various parts of Plymouth, Devonport, and Stonehouse.

ETIOLOGICAL STUDIES AND OBSERVATIONS RELATING TO MEDITERRANEAN FEVER.

In connexion with the leading article in our present issue on the Health of the Royal Navy, we desire to call the attention of our Service readers to the excellent papers in the appendix of the recently published naval medical report relating to Mediterranean fever and other subjects; and if they will at the same time also turn to the January number of the *Journal of the Royal Army Medical Corps*, p. 113, they will read some interesting correspondence regarding the possible infection of man with micrococcus Melitensis by goat's milk. The case was one in which a certain number of milch goats were taken on shipboard at Malta and nearly all those persons who drank the milk are stated to have contracted Malta fever, whereas the others did not. Should subsequent inquiry fully establish the accuracy of this statement, it will be the first time that this mode of infection of man through goat's milk has been demonstrated.

MENTAL DISEASE AMONG RUSSIAN OFFICERS.

The *Novosti* quotes a report from Dr. A. I. Ozeretskoff, who was director of the pyschiatric section of the Moscow Military Hospital during the first year of the Russo-Japanese war, showing that the largest proportion of officers in the active army suffering from troubles of the mind came from the infantry and the smallest number from the artillery and the sappers—namely, 38, two, and four respectively. The ages within which the greatest number of cases was noted were between 36 and 40 years.

Orders have been given to proceed with the formation of the four additional Militia companies of the Royal Army Medical Corps which have been authorised. They are to be called the London, Glasgow, Devonport, and Cork Companies.

ROYAL CORNWALL INFIRMARY, TRURO.—Sir Robert Harvey has given £1000 to the Royal Cornwall Infirmary for the endowment of a bed in memory of his deceased eldest son. Last year Sir Robert Harvey gave a similar sum to the same institution for the purpose of endowing a bed in memory of his late wife.

Correspondence.

"Audi alteram partem."

VENTRAL FIXATION OF THE UTERUS BY A NEW METHOD.

To the Editors of THE LANCET.

SIRS,—I have read with much interest in THE LANCET of Dec 23rd, 1905, p. 1835, Mr. W. G. Richardson's remarks on the above subject and am forcibly reminded of the description of an operation on the same lines and for the same object which I published in THE LANCET of Feb. 12th, 1898, p. 429, and to which your correspondent Mr. J. Phillips has referred. The frequent performance nowadays of operations for the relief of uterine displacements and prolapse renders the subject an important one and my only object in drawing attention to the matter is to elicit the experience of surgeons as to the best method of obtaining uterine fixation and permanent as well as temporary success in these troublesome cases. From my own personal experience there can, I think, be little doubt that in women during the child-bearing age the utilisation of the round ligaments as suspensory agents within the abdomen, in the place of buried sutures passing through the uterine tissues, presents many advantages, especially as regards freedom from anxiety as to possible trouble in a subsequent pregnancy. Further, I believe that Mr. Richardson's suggestions to preserve the peritoneal covering of the ligaments and their blood-supply intact, and to bring the ligaments through the abdominal wall at some distance from the middle line on either side, in order to avoid kinking and strain on ligaments and uterus, are valuable additions to my original description. Moreover, as he points out, one of the essential points to bear in mind in cases of prolapse is to sling up the uterus sufficiently high in the abdominal cavity and to secure thorough contact of anterior uterine surface and abdominal wall, instead of merely attaching the fundus at an angle to the parietes. In cases of retroversion and moderate degrees of uncomplicated prolapse the operation which Mr. Richardson and I have described will, I believe, if properly performed give excellent results. In old-standing and complicated cases, however, where there is prolapse, not only of the uterus itself, but also of the vagina and contents of the pelvic cavity, it seems to me that there is still room for further inquiry and further trial.

The difficulty in these cases is that the uterus itself, although securely fixed above, undergoes a gradual elongation in its lower and cervical segments when subjected to the forcible downward drag of the vaginal walls. And I have seen a uterus gradually elongated to the extent of five inches under such conditions; while even hysterectomy with the suprapubic attachment of the cervical stump as in the old days of the clamp operation fails to cure such cases. The unrolling and downward sliding movements of the vaginal walls go gradually on, thus allowing the further descent of the rectum and bladder. Complete anteflexion with the fundus passed down behind the pubes and the cervix and vaginal walls fixed by suture to the abdominal wall has in one or two senile cases of considerable laxity given good results.

It is probable, however, that in the worst cases any operation of suspension of the uterus only, from above, will require to be supplemented by some method which has for its object the restoration of the support at the pelvic outlet, either by the narrowing or obliteration of the vagina or by the reimplantation of the levatores ani. Mr. Richardson mentions several cases of advanced type in which the operation of ventral fixation by means of the round ligaments, as suspensory agents, has given good results after a period of three or four years. The elongation of the uterus of which I have spoken is a gradual process and takes some time to develop fully. If in the case of working women a further examination made in the standing or squatting posture at a late date reveals no descent of uterus, bladder, or rectum, then I think we may fairly claim that the problem of the cure of uterine prolapse has been solved.

I am, Sirs, yours faithfully,

Leicester, Jan. 14th, 1906. C. J. BOND.

SANATORIUM TREATMENT FOR TUBERCULOSIS.

To the Editors of THE LANCET.

SIRS,—Dr. C. Theodore Williams in THE LANCET of Jan. 13th, p. 118, throws doubt upon the correctness of my view, that statistics show that the results obtained by treating cases of pulmonary tuberculosis in German sanatoriums are much better than those obtained by the methods adopted between 1840 and 1870, even by men of so great a repute as his father. He thinks that my contention is based on erroneous statements contained in the following paragraph, quoted by me in a recent article in your columns:—

> Dr. C. J. B. Williams stated that out of 7000 hospital cases of phthisis he could only reckon 24 instances of cure and 51 of partial cure with indefinite duration, or a total of 75, and out of 1000 patients in the upper classes treated between 1840 and 1870 only 34 recovered completely, though 285 could be classed as well when regarded in relation to their general health.

This sentence was quoted almost *verbatim*—with one error to which I shall presently refer—from Dr. Wilson Fox's "Treatise on Diseases of the Lungs and Pleura," edited by Dr. Sidney Coupland, p. 838, London, 1891. Dr. Theodore Williams can find no mention of the first portion of the quotation and thinks "such a statement highly improbable." At the time of writing my article I was not able to put my hand on the original statement and so contented myself with Dr. Wilson Fox's quotation. I have since found the original statement and now give it *in extenso*. It is taken from the Lumleian Lectures of Dr. C. J. B. Williams as reported in THE LANCET of April 19th, 1862, p. 401, and runs as follows:—

> Now as to the summary of my experience during these seven years of practice [1849 to 1855] of the result of treatment of phthisical cases. I have notes of 7000 cases of phthisis, and I find the average duration of life under the disease has been 4 years; they have terminated in the immense majority of cases in death. The experience of Louis and Laennec gave an average duration of 2 years. So that by the introduction of cod liver oil and other agencies we have lengthened the period and doubled its duration. What further? This is only a minor success—a prolongation of life. Can we claim Success A—cure? It is doubtful; I can scarcely say. I have notes of patients who, having presented the most unequivocal signs of phthisis, have lived afterwards from 2 to 18 years in comparatively good health, but it were hard to say whether they were perfectly cured. Phthisis is a constitutional disease, and it is hard to change the constitutional character. I have notes in this period of only 24 cases to which the word "cured" could be applied. They have gone on from 2 to 18 years in fair health and filling their places as useful members of society. Of partial cure, cases in which the duration of life has been prolonged beyond the average of 4 years to a longer period, I have 51 cases of prolongation from 6 to 31 years. They have passed these years in a considerable degree of comfort, and with the ability of fulfilling their social duties and partaking in rational pleasures. These persons are now living; their life has been rendered useful and comfortable, and they may yet live for many years. I have another set of cases in which, although death has followed in almost if not quite all of them, life was prolonged to a considerable extent. There are 20 cases in which it was extended for 6 up to 16 years. These three classes make up in all 75 cases. These are all the successes of which I can boast. Perhaps, if my records had been more completely accurate, I could have added some additional names to the list; but, on the other hand, it might have been necessary to register also some failures which have now escaped enumeration.

I regret that I made an error in calling these 7000 cases "hospital cases." I fell into this error because I could not reconcile these remarkable results with the results obtained during the same period of time, 1840–70, by treating "1000 cases of the upper classes." I am afraid I did not realise that these 1000 cases had been especially selected from many others. The fact that the bulk of the 7000 patients were not of the hospital class but were private patients adds point to my contention that better results are now obtained by means of sanatorium treatment. Under present conditions 31–53 per cent. of the German patients remain capable of full work for five years after leaving the sanatorium, where the average duration of treatment is 75 days, and Dr. Theodore Williams tells us that these results are "greatly inferior to those of the Swiss sanatoriums." About 1850 Dr. C. J. B. Williams's 7000 cases showed an average duration of life of four years from the commencement of the disease, and only 1·07 per cent. of "successes."

Dr. Theodore Williams further objects to the following comment on the results obtained in the 1000 patients in the upper classes:—

> No statement is made as to the time which had elapsed in the case of these 285 patients from the commencement of their disease—that is to say, of the length of time during which they had maintained their good condition, beyond the fact that they were "well" when last seen.

I much regret that my meaning should have been so

obscure as to lead Dr. Theodore Williams to think that I had, even unwittingly, done him an injustice. In an article on the Economic Value of Sanatoriums I was compelled to regard the duration of capacity for *full* work as the criterion, so far as the effects of treatment were concerned. I found that by sanatorium treatment from 31 to 53 per cent. of German working men were restored to a capacity for full work for five years from the time their treatment in a sanatorium ceased. I wished to compare these statistics with statistics derived from cases treated before the advent of the sanatorium treatment. I especially wanted to know how long the 285 patients of Dr. Theodore Williams had been capable of following their occupations after treatment had ceased. I could find no answer in his book nor can I find an answer in his letter. He adds, it is true, to these 285 patients two classes with which my argument was not concerned—viz., 293 cases of persons "subject to recurrence and obliged to limit their exertions" and 224 persons "obliged to devote themselves to the care of their health." These make a total of 802, of whom "41·4 per cent. lived five years and upwards and 30 per cent. from 10 to 30 years." These statistics tell us something about the average length of life of these patients from their first symptoms, but they do not tell us how long the 285 persons had maintained their good condition—that is, how many years they had been capable of full work—without any relapse.

The statistical part of the argument that the treatment of pulmonary tuberculosis at the present is more successful than it was before 1870 depended in my article on the 3566 cases of Dr. J. E. Pollock, the 7000 cases of Dr. C. J. B. Williams, and 100,000 cases in the German sanatoriums. Incidentally I mentioned the 1000 cases of the upper classes, as these were said to have given the best results published before 1870. As I stated, I was not able to obtain the information I wanted, to make them strictly comparable with the German statistics, and therefore I did not develop my argument from them. Dr. Theodore Williams's letter compels me to refer to them in greater detail. His statistics are not drawn up on the rigid lines of the German companies; they are, as their author says in his book, selected. 1000 cases are selected from a mass of records, all cases which had not been "under treatment 12 months and upwards" being eliminated. As the average duration of life after the onset of the disease varied from two to four years at the period under consideration, it is clear that this method of selection must have eliminated cases which would have diminished the percentage of those showing improvement. From the 1000 cases so selected all deaths are then eliminated, although they amount to 19·8 per cent. In this way 802 cases are selected for consideration. Dr. Theodore Williams says his statistics "demonstrate that 802 consumptive patients after being under observation for an average of eight years were able to show 72 per cent. who were capable of following their professions and callings more or less actively and 35·5 per cent. were in full swing of work." He adds that "he does not fear comparison of these statistics with those of any German sanatorium." If your readers will turn to p. 321 and p. 327 of the work "Pulmonary Consumption," by Dr. C. J. B. Williams and Dr. C. T. Williams, London, 1887, they will find the following particulars:—

State of Lungs at Last Report.		*State of Patient at Last Report.*	
Dead	198	Dead	198
Healthy	34	Well	235
Improved	280	Tolerably well	293
About the same	102	Worse	224
Worse	321		
Unknown	65		1000

If we do not deduct the cases of death but follow the usual method of considering the 1000 cases as a whole we see that: (1) the percentage of cases "capable of following their professions and callings more or less actively" should be 57·8 (28·5 + 29·3) rather than 72; and (2) the percentage of cases "in full swing of work" should be 28·5 rather than 35·5.

The condition of the lungs was healthy in 3·4 per cent. of these 1000 cases, improved in 28 per cent., making a total of 31·4 per cent. of patients in whom the physical signs showed improvement. 90 per cent. of these patients (being 28·5 per cent. of the whole) are classed as "well."[1] The percentage of patients in whom the physical signs were not worse—i.e., became healthy, improved, or "remained much about the same"—is 41·6, the percentage of patients capable of following their professions more or less actively being 57·8. The percentage of cases in which the condition of the lungs was worse is 32·1, but the percentage of cases in which the condition of the patient was worse is only 22·4.

I am content to leave it to the judgment of your readers to decide whether the late Dr. Wilson Fox or myself underestimated these results or "confused the local results—i.e., the changes in the lungs—and the general results," when we said of the 1000 cases "only 34 recovered completely, though 285 could be classed as well when regarded in relation to their general health."

I am, Sirs, yours faithfully,

Brook-street, W., Jan. 15th. ARTHUR LATHAM.

[1] If we add all the 65 cases, in which the state of the lungs was unknown, to the improved cases, the percentage of patients with improved physical signs becomes 37·4, of which percentage 75 per cent. would be classed as "well."

ICELAND MOSS.

To the Editors of THE LANCET.

SIRS,—Iceland moss at one time enjoyed considerable reputation among "throat remedies" in the form of either decoction, jelly, or lozenge, and was to be found in the British Pharmacopœia as late as 1885, but it has gradually become neglected and is now rarely heard of. Recollection of its associations awakened a desire to test the clinical evidence of its traditional value and through the coöperation of Mr. W. H. Martindale I am able to substantiate those traditions and have no hesitation in suggesting its restoration to a place in our Pharmacopœia.

Percentage Composition of Cetraria Islandica.

Cetrarin	3
Lichenin	45
Amylaceous fibrin	36
Gum	4
Non-crystallisable sugar	4
Water and salts (inorganic)	8

It will be seen that the chief component is lichenin ($C_{12}H_{20}O_{10}$), a starch-like body which consists of two elements soluble in hot water, one of which is also soluble in cold water; there is a small quantity of soluble gum and 36 per cent. of a substance, partially extracted by boiling water, called amylaceous fibrin. Cetrarin is a bitter principle readily extracted by hot water and gives the characteristic taste to the decoction and was probably valued as a bitter tonic.

Thus Iceland moss affords the necessary material for lubricating and soothing the mucous membrane with which it comes in contact. This quality is amply realised in the discs called "lichenoids," perfected by Mr. Martindale, who has excluded the cetrarin. They are of a size and consistence suitable for slow and passive solution in the mouth, a process by which the demulcent and lubricating properties are better obtained than by the ordinary soft jujubes which encourage rapid mastication and active deglutition. They will be found satisfactory in inflammatory and excitable states of fauces and oropharynx, especially to speakers who suffer with dry mouth and throat. As a sialogogue Iceland moss is an excellent corrective in pyrosis.

I am, Sirs, yours faithfully,

WYATT WINGRAVE, M.D. Durh.

Stratford-place, W., Jan. 16th, 1906.

A CASE OF CLAY-COLOURED STOOLS WITHOUT JAUNDICE BUT ATTENDED WITH COPIOUS BILIOUS VOMIT.

To the Editors of THE LANCET.

SIRS,—I trust that Dr. W. Gordon will forgive me for reminding him that the points at issue in the correspondence which has been appearing under the above heading are two: first, his statement that his case of clay-coloured stools without jaundice but attended with copious biliary vomit "demonstrated during life that an abundance of bile may enter the duodenum, yet if the pancreatic juice is cut off from the intestine stercobilin may be absent from the fæces"; and second, Mr. A. W. Mayo Robson's suggestion that "the characteristic white stools that are often seen in pancreatic disease in the absence of jaundice owe their pale colour entirely to the solidification of the fat when the motions cool although there may be a normal amount of bile present."

With regard to the first, Dr. Gordon has failed as

yet to bring forward satisfactory evidence proving that stercobilin was, in fact, absent in the case he described and until he does so his case, while adding one more to the recorded instances of clay-coloured stools in pancreatic disease cannot, be regarded as demonstrating his assertion. Acholia is a convenient clinical term by which to describe the naked-eye appearance of the stools and does not imply that the absence of colour is due to the same cause in all cases. Apart from obstructive jaundice it has been described by Nothnagel[1] in leukæmia, cancer of the stomach and intestine, intestinal catarrh in children, and especially in cases of advanced phthisis. Von Jaksch[2] has noticed it in tuberculosis of the intestine, chronic nephritis, chlorosis, and scarlet fever. Berggrün and Katz[3] have called attention to its frequency and diagnostic value in chronic tuberculous peritonitis in children. In some of these the lack of colour arises from excess of fat and in others, where the normal proportion of fatty matter is present, from the absence of the usual pigment or the presence of abnormal derivatives from it, so that because no stercobilin is found in one case or group of cases, it does not follow that such is the explanation in all instances where the stools have a similar appearance. Yet Dr. Gordon in his last letter quotes from a paper by Dr. W. B. Cheadle on acholia and argues that because no stercobilin was detected in five cases of gastro-intestinal disturbance accompanying teething, &c., in young children and in a case of sprue described by Dr. Cheadle, his views with regard to the causation of the white stools in pancreatic disease are supported, and that my observations regarding the presence of stercobilin in non-malignant disease of the pancreas lack confirmation. Such inferences are entirely unjustifiable. The data quoted by Dr. Gordon only prove that in the particular conditions dealt with in the paper stercobilin is often deficient and "in extreme and typical cases may be entirely absent," they do not explain the cause of the condition met with in the class of case under discussion. In speaking of the white stools occasionally met with in tuberculosis of the intestine and other conditions in my former communication I wished to demonstrate that lack of colour in a stool does not necessarily mean absence of stercobilin and that inspection is an insufficient ground on which to found an opinion, as I gathered Dr. Gordon had done in the case he described.

With reference to Mr. Mayo Robson's suggestion, I still think, in spite of Dr. Gordon's summary dismissal of those results quoted in my former letter which he does not consider support his view, that the available evidence points to an excess of fat being the primary factor in determining the abnormal colour met with in pancreatic disease. To have quoted in detail the results of my analyses of the fæces in pancreatic disease and biliary obstruction would have carried my letter to unreasonable lengths, but if Dr. Gordon will refer to a paper I read in the Pathological Section of the British Medical Association meeting at Leicester[4] last year he will find a summary of the figures obtained in 53 cases and a description of the methods employed. I may say that in 21 cases of chronic pancreatitis, in which there was no evidence of biliary obstruction, the quantity of fat varied from 21 to 62 per cent. of the dry weight, the average being 46 per cent., and that in all but one an average reaction for stercobilin was obtained and in that one traces of the pigment were also found. Dr. Gordon contends that if the non-fatty residue from the fæces contains a normal proportion of pigment the stools might be expected to much exceed the normal bulk when they contain a high percentage of fat. This is, in fact, the case, for, as Mr. Mayo Robson pointed out in his Hunterian lectures, "exceedingly bulky, soft, greasy, pale motions are almost characteristic" of typical cases of pancreatic disease.

As to whether the fermentative changes which appear to contribute to the bulk of the stools in some cases also influence the character of the pigment is a question that is under investigation, but the results I have so far obtained do not suggest that they play an important part in diseases of the pancreas as a rule.

I am, Sirs, yours faithfully,

Beaumont-street, Portland-place, W., Jan. 8th, 1906. P. J. CAMMIDGE.

[1] Nothnagel: Die Erkrankungen des Darmes, &c., p. 18.
[2] Von Jaksch: Klinische Diagnostik Innerer Medicin, II. Auflage, Wien, 1889, p. 213.
[3] Berggrün and Katz: Weiner Klinische Wochenschrift, 1891, p. 858.
[4] Brit. Med. Jour., Oct. 28th, 1905, p. 1102.

PHYSIOLOGICAL TESTS FOR PHARMACEUTICAL PREPARATIONS.

To the Editors of THE LANCET.

SIRS,—The question of applying physiological tests to certain pharmaceutical preparations is admittedly one of considerable importance and may have much practical value, but judging from many statements that have recently been made in the medical and pharmaceutical press it would appear to have assumed undue proportions in the minds of certain people. Take the case of ergot; it seems to me that Dr. W. E. Dixon's most interesting and suggestive paper read[1] at the Brighton Pharmaceutical Conference would have had more definite scientific value if he had been able to state that he had himself selected his samples of crude ergot, had had liquid extracts prepared from them to B.P. instructions under his own supervision, and had after such procedure found the variation in activity that he deplored. As it is, there is no evidence to show that the whole group of six—four of which were pronounced worthless and the remaining two somewhat indifferent—did not come out of the same manufacturing laboratory where through some oversight a bad batch of ergot had been passed for use. It has yet to be shown that there will be any variation of clinical importance if proper care is exercised by a competent pharmacist both in selecting his crude drug and in adhering to such a uniform treatment of it as the British Pharmacopœia enjoins. The principle of centralising control which your correspondent, Mr. H. Wippell Gadd, recommends is not, I think, one which will find acceptance in England until it is shown first that bio chemical standardisation is of vital importance and then that private enterprise and effort are unable to deal with the subject.

I am, Sirs, yours faithfully,

WILLIAM MARTIN, M.D. Durh.

Newcastle-upon Tyne, Jan. 13th, 1906.

MODERN MEDICAL EDUCATION.

To the Editors of THE LANCET.

SIRS,—"L.S.A." need not de-pair. When his son has practised under his able guidance for a few years he will have settled down and have become to regard medical work from a practical standpoint. It is not every newly and highly qualified man who has the advantage of the tuition that "L.S.A." is so able to impart. What can be said for the thousands who have to dispense with this advantage? Ask any of these men, fresh from the examination room, the proportion of opium contained in Dover's powder or of arsenic in Fowler's solution. I fear they will have scarcely heard of these preparations. Ask such a man to treat a case of simple anæmia. He would probably commence his examination by taking a blood count; then, after having treated the patient for a week, would want to take another in order to discover whether his treatment had been effectual or otherwise.

The student is taught in hospital to diagnose; he is called upon to confirm diagnosis by pathology and bacteriology; to get to the root of the matter—if he can; to start his treatment from the bottom and work upwards; but his science may be at fault and his time therefore wasted. I suppose I should bring a hurricane of abuse upon myself if I advocated the method of "treating the symptom," but it is really not a bad plan when the diagnosis is in doubt, and it is done to a large extent even by those who should know better. Then again, in hospital one meets with cases generally of a more serious nature than he will find in his own consulting-room. I mean this: that he will in his own practice see more frequently cases such as influenza, measles, bronchial catarrh, or neuralgia than he will in hospital. It is from such ailments as these that the medical man will probably earn three-fourths of his income, and these very evident cases that can be diagnosed in a moment are just those of which he knows least. It is here that the dispensing chemist steps in and I have no hesitation in saying that the chemist knows more about these cases and gives far more suitable and efficacious remedies than many a medical man who has been in practice for years; he knows the therapeutical value of the goods he is handling, the newly qualified man does not. A year behind the counter of a prescribing chemist would teach a man more about treatment of simple cases than a lifetime in the wards or, for the

[1] See Year-book of Pharmacy, 1905, p. 387.

matter of that, in the out-patient department of a general hospital. "General Practitioner" says that he learnt his methods of treatment from his house physician. I give "General Practitioner" credit for his attempt and if he perseveres in some years' time he may know something about it, but I am sure if his information was gained from the general run of house physicians his knowledge must still be in a somewhat embryonic condition. I remember one of the surgeons of a large provincial hospital prescribing one gross of santal oil capsules at a cost of 6*s.* or 7*s.* and turning to the assembled students remarking that it was a pity that there was no more economical way of prescribing the drug.

The medical treatment of disease is not *taught* in the curriculum at all; the student is allowed to pick up the knowledge as best he can. Nor are your correspondents the only ones to take notice of this fact; the wholesale drug houses have been quick to recognise the deficiency and to take steps to supply it. We can now learn all we want to know in the way of treatment (by medicine) from the drug traveller. We all know the plausible person who represents these wholesale houses, equipped with his samples of packed goods and a supply of stock medical expressions; he will give a learned discourse on the therapeutical value of each of his wares and set you up with a compressed remedy for each and every ill. You will perhaps prescribe his remedy, and the patient, wise in his generation, when he requires further treatment will replenish his supply from the nearest grocer or tea-shop. He (the patient) sees no need to consult his medical man further. The preliminary subjects for medical education are not to be despised, but could they not be shortened with advantage? Then perhaps more time might be devoted to the diagnosis and treatment of disease. Add to this the compulsory service of at least a year with a man in general dispensing practice, the budding medico might then be able, with some hope of success, to prescribe a remedy that would do his patient some good. If the newly qualified medical man is really anxious to gain confidence in himself, in his methods of dealing with a patient as well as being able to prescribe for him, let him do as I did: go as assistant for as long a time as he can spare to a man who is known to have a good general practice, go and dispense his medicine, do his midwifery, keep his books, attend to his surgery patients, and do as much visiting as his principal will allow, then he may expect that this practical experience thus gained, *plus* the theoretical knowledge he has stored up from his hospital and book work, will be the means of enabling him to secure the wherewithal to provide for his needs—not much more.

I am, Sirs, yours faithfully,

Jan. 16th, 1906. A. F. H.

TUBERCULOSIS AND THE NORTHAMPTON BOOT TRADE: A PROPOSED SANATORIUM.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

NORTHAMPTON and Leicester are the two principal manufacturing centres of the boot and shoe trade in England. In both towns from one-fifth to one-sixth of the population work in that trade. Dr. James Beatty, who is the medical officer of health of Northampton, says that out of the total population of 87,021, 57,703 inhabitants are more than 15 years old, and of these latter 12,355 work in the boot trade within the old borough boundaries. Then he calculates that while the death-rate for England and Wales in 1903 amounted to 9·77 per 1000 among the population over 15 years of age, the death rate at Northampton of the same section of the population was 9·48 per 1000, as Northampton is a large industrial town these general figures are fairly favourable. Comparing the death-rates of those employed in the boot industry with the death-rates for the whole population of Northampton the following causes of death are less fatal in that trade: common infectious diseases (0·16, as against 0·05 per 1000 per annum), diarrhœa (0·16 to 0·08), erysipelas and septic diseases, cancer, bronchitis, pneumonia, cirrhosis of the liver and alcoholism, heart disease, apoplexy, diabetes, and accidents. All these causes of death are less fatal among the boot and shoe makers than among the general population. It is particularly satisfactory to note that the working classes engaged in the staple industry of the town have only one death from cirrhosis of the liver and alcoholism as compared with three deaths occurring from this cause among the entire adult population. The figures are 0·21 per 1000 deaths among the general population and 0·07 per 1000 among the boot and shoe makers. There is this, however, to be said and it applies especially to such diseases as cancer which are rarely fatal before the age of 40 years—namely, that many young women are employed in the boot trade. Of course, a considerable portion of these women marry, leave the trade, and die from these diseases afterwards, and their deaths are recorded as occurring among the general population and not in the boot trade.

But apart from this consideration the boot trade cannot be considered a healthy trade. The fact that whereas in the boot trade only 0·59 per 1000 per annum die from senile decay while the proportion in the population at large is 1·27 may perhaps be explained. The real proof of the unhealthy nature of the work is to be found in the figures relating to pulmonary tuberculosis. In England and Wales after the age of 15 years there were in 1903 per 1000 of the population 1·60 deaths from this disease. For the entire adult population of Northampton the proportion was 1·82, but among those engaged in the boot trade the proportion was 2·59. As in regard to other tuberculous diseases the difference was only 0·13 per 1000 for the entire population and 0·14 for those engaged in the boot trade, it is evident that there is in this industry some special cause of susceptibility and of infection which results in this disproportionate prevalence of pulmonary tuberculosis. This becomes all the more evident when the different divisions of the trade are examined. Thus for adult closers and machinists there were only 3·28 and 3·09 deaths per annum from all causes. As the general death-rate for adults in England and Wales was during the same year 9·77 per 1000, this discrepancy is explained by the fact that these branches of the trade are almost entirely in the hands of women, and the small number of deaths is due to the early marriage of the women who then leave the trade. On the other hand, as pulmonary tuberculosis is a disease that attacks younger persons it will be found that out of the 3·28 and 3·09 deaths per 1000 among closers and machinists no less than 1·44 and 1·19 per 1000 of these deaths were due to pulmonary tuberculosis. Whereas during the whole length of life from the age of 15 years among the entire population of England and Wales the proportion of deaths from this disease was 1·69 to 9·77, the proportion of deaths from it during a very short period of their lives was as 1·44 to 3·28 among closers and 1·19 to 3·09 among machinists. These two branches of the industry employ more than 4000 persons at Northampton. Two other branches, first the rough stuff and pressmen, and secondly what comes under the heading of miscellaneous, only employ 576 and 618 respectively. The general death-rate for the former is exceptionally low—namely, only 8·50 per 1000—but the rate for pulmonary tuberculosis is 2·27 per 1000, while for the latter the general death-rate is exceptionally high—namely, 15·98 per 1000—and that due to pulmonary tuberculosis exceptionally low—namely, 1·82 per 1000.

As there are many women employed in the miscellaneous occupations and many leave the trade early so as to marry it is best to consider those branches where men work, and work for the greater part of their lives. The statistics commence at the age of 15 years and there are hardly any deaths before that age. Nevertheless, it must be borne in mind that many boys begin to work in the trade at the age of 13 and 14 years, so that unwholesome conditions prevailing begin to affect them before they reach the age at which the calculation commences. The more important branches are the lasters, numbering 5504, and their general death-rate is 13·38 per 1000 per annum, with 3·20 due to pulmonary tuberculosis; the finishers numbering 2739, with a general death-rate of 10·41 and 3·08 due to pulmonary tuberculosis; and the clickers numbering 1449, with a general death-rate of 10·58, and from pulmonary tuberculosis 3·91.

The last-mentioned branch, it will be seen, is the worst as regards pulmonary tuberculosis. Mr. Charles Francis Wright, H.M. inspector of factories, speaking at the sessional meeting of the Royal Sanitary Institute held at Northampton last November, explained that "clicking" consists in cutting skins as they come from the currier to make the various parts of the upper portion of the

boot. This is generally done by hand, the operative standing and bending over the bench on which the leather is laid out. The speaker added: "The clicking room is as a rule separate and distinct from other portions of the works and ample air-space is provided, but the supply of fresh air is not quite so plentiful as one could sometimes wish, although Section 7 of the 1901 Act requires that the occupier of the factory shall maintain sufficient ventilation. I am afraid this in most instances is due to the workers themselves and partly (in cold weather) to the temperature of the room being kept too low for comfort. It is decidedly a sedentary occupation."

Dr. Beatty said: "The most striking fact is the high mortality among the clickers. Knowing the conditions in which the finishers work one would have thought that phthisis would have been most prevalent among them; yet, while the disease is very prevalent, in this respect they are surpassed by both lasters and clickers."

According to Dr. Thomas Oliver in "Dangerous Trades" the mortality from pulmonary tuberculosis is lowest among agriculturists and is set down at 106. To take a few other trades for the sake of comparison, the mortality from the disease is estimated at 148 among lead-workers, 159 among blacksmiths, 185 among bakers and confectioners, 202 in the cotton trades, 269 among stone-quarriers, 279 among brass workers, and the worst trades are potters and earthenware manufactures 333, cutlers 382, and file-makers 402. For the whole of the shoe trade at Northampton the mortality from pulmonary tuberculosis is 2·59 per 1000—that is, 259 as compared with the figures given above for the other trades. Then, to subdivide the boot and shoe trade, we have the figures 308 for the finishers, 320 for the lasters, and 391 for the clickers. These last three figures do not fall far short of the very worst trades on the entire list of dangerous trades.

Dr. Beatty urges that there is here a case for special inquiry, but neither medical officer of health nor inspector of factories seems as yet able to offer any very definite explanation or suggestion. When the matter was discussed at the Royal Sanitary Institute all the medical officer of health of Northampton could say by way of explanation is contained in the following passage:—

"I doubt that the prevalence of the disease can be laid at the door of the factories and workshops. Some of them I know ought to have a far higher standard of ventilation and cleanliness, but if the system, apart from the individual place, is to blame, I do not see how to account for the difference between the mortality among men and among women. It may be that a more accurate death certification would show that the disease among women had been caught in the factories, though their names do not appear as shoemakers in the death returns; but this I doubt, for our investigations into the cases of phthisis notified to the health office show much the same results as the death returns indicate. Two factors which, it seems to me, are worth consideration depend upon the differences between the habits of men and women. Firstly, women as a rule do not spit freely, men often do, and that the disease spreads from the dried expectoration is well known. Hence possibly its prevalence in men's work-places as compared with women's. Secondly, men frequent public-houses, women as a rule do not. Addiction to alcoholic stimulants undoubtedly predisposes to phthisis and in addition a source of infection is easily found in the habits which make men in the lower class public-houses use the floor indiscriminately as a spittoon."

It must be confessed that this passage does not help the question forward. The difference between the mortality among women and men is not so very great. The worst case among the men is in regard to the clickers—namely, 3·91 deaths from pulmonary tuberculosis out of 10·58 deaths from all causes; so that pulmonary tuberculosis was accountable for a good deal more than a third of the total deaths. Among the closers, who are mostly women, there were 1·44 deaths from pulmonary tuberculosis out of a total of 3·23 deaths; here also more than a third of the deaths were due to pulmonary tuberculosis. The figures already given show that the same may be said with regard to the machinists who are also for the most part women. As for the fact that women are less prone to expectorate, that applies to all other trades, while the dangers of the public-house and of alcoholism, on Dr. Beatty's own showing, apply much less to the workers engaged in the boot and shoe trade than to the population at large. According to his own statistics quoted above, there are 0·21 deaths per 1000 of the whole population attributed to cirrhosis of the liver and alcoholism, while among the shoe workers the proportion is only 0·07 per 1000. It seems therefore fairly obvious that the cause of the extraordinary prevalence of pulmonary tuberculosis resides in the industry itself. There is a material defect somewhere. Mr. Walter Beale, President of the Northampton Boot and Shoe Manufacturers' Association, said that the most skill and but little exertion were required in the clickers' department. There was nothing in the work to keep the men warm, therefore they objected to the draughts caused by opening the windows. In other departments where there was more exertion in lifting leather and cutting with heavy knives it was easier to keep the windows open and the men were more healthy. Also a weak child naturally would be set to learn that part of the trade where the least muscular exertion was required. From this it is obvious that here, as in many other trades, mechanical methods of ventilation scientifically applied are needed. By no other means can the incoming pure air be so diffused and travel so slowly as not to cause a draught and yet change all the atmosphere of the factory or workshop two or three times per hour. Of course, the windows must be kept closed so as not to interfere with the ventilation and so as to avoid draughts. It is time that the difference between ventilation which is indispensable to the maintenance of health, and draughts which often cause illness, should be understood. Here, then, judging from the evidence given, is the first remedial measure that should be taken. As power must be employed for the machinery used in making boots and shoes, it would probably not entail much extra expense to divert a little of that power to work mechanical ventilators.

On the workers' side Mr. John Hill, secretary of the Northants branch of the Working Men's Club and Institute Union, when speaking of the clickers, alluded to their bending continuously, which he thought prevented their breathing freely. He thought there were much dust and dirt and though there was less pressure on the chest than formerly, with the introduction of machinery there were more fumes, more dampness, greater variations of temperature which was in summer much too high, and above all he complained of the almost total absence of ventilation:—

He had never been in a factory where there was any complete or scientific system of ventilation or heating arrangements, and the effect on the health of the worker was very bad, especially on the boys, who frequently showed signs of loss of strength and vitality after the first few months' work. He referred with pleasure to the decreased use of alcoholic drinks in the factory, as the men seemed to do quite as much work without it.

Such are some of the facts in relation to the exceptional prevalence of pulmonary tuberculosis among the boot and shoe makers of Northampton. These figures were made public at the last session of the Royal Sanitary Institute which met at Northampton. Further, a general impression prevails, it is roughly estimated, that there are about 500 inhabitants of Northampton who are actually suffering from pulmonary tuberculosis. In these circumstances it is not surprising that the question of building a sanatorium has often been discussed by the borough council. Indeed, the question has been debated off and on for the last five years. Finally, at a meeting of the town council held in September last, a motion was carried in favour of building a sanatorium. But this decision, instead of setting the matter at rest, so far as the action of the public authorities is concerned, has been challenged and doubt and indecision still prevail. The question also arises whether a town should be taxed to provide the means of treatment of cases of illness obviously produced by mismanagement in a particular trade. Indeed, there is a whole series of very interesting problems arising out of the exceptional prevalence of pulmonary tuberculosis among the boot and shoe makers of Northampton.

(To be continued.)

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Higher Education in the Potteries.

THE movement for extending higher education in the Potteries has received a great impetus from the offer by the Duke of Sutherland of Trentham Hall to the Staffordshire county council for higher educational purposes. For some time a scheme to establish a university college for North

Staffordshire has been energetically brought forward and promises of help have been received from the North Staffordshire Institute of Mining and Mechanical Engineers, from a joint committee of china and earthenware manufacturers, and from various other sources. The scheme commended itself so much to the county council that it offered to contribute £12,500 to the building fund and to undertake the maintenance of the college. It will thus be seen that the munificent gift of the duke could not have come at a more opportune time. Further, the hall is considered to be in every way admirably adapted for the purposes of a university college.

The Water Famine at Leicester.

The water famine at Leicester has become more and more critical. Supplies are now cut off for ten hours out of the 24. At the beginning of the year one of the three reservoirs was quite dry and the other two had only a quarter of their normal quantity. About 300,000 gallons per day were obtained from a colliery shaft and so great was the emergency that 200,000 gallons per day were pumped from a well which had been sunk in a field adjoining the cemetery at Belgrave, the water being pumped directly into the mains. When analysed it was found to be wholesome but the residents were uncomfortable at the thought of drinking water from a well 40 feet deep within 60 yards of a cemetery. Indeed, funerals have been conducted with a stone's throw of the well. Fortunately, the heavy rains of the last few days have considerably increased the quantity of water available and will probably enable the authorities to tide over the crisis safely. In a couple of months auxiliary supplies from the corporation of Loughborough will be procurable. The Derwent Valley scheme, involving an outlay of about £8,000,000 sterling, cannot be completed for six years. The health of Leicester so far continues good but a serious state of affairs may at any time arise.

Kidderminster and Anti-anthrax Serum.

At the last meeting of the Kidderminster council an interesting legal question arose in connexion with the proposed free supply of Sclavo's anti-anthrax serum. The health committee had been advised by the medical officer of health to pay the cost of any serum which might be required. It was found, however, that the workhouse infirmary must be excluded from such benefit on the ground that payment for the serum would be payment for medicine, which is illegal and can only be permitted after special sanction by the Local Government Board.

The Local Hospitals.

Some time ago the Birmingham Lying-in Charity acquired a freehold site close to the General Hospital whereon to build a central home. It was, however, found that the site was too small for the purpose. At the last meeting of the board a letter was read from Mrs. Barrow Cadbury, offering the adjoining site of land on condition that suitable space shall be left round it for light and air. This gift the Charity has gladly accepted and the building subcommittee will at once proceed to erect the home.—Two years ago an anonymous donor offered £1000 to the Wolverhampton Women's Hospital on condition that £3000 were subscribed towards reducing the debt on the building account on or before Dec. 31st, 1905. An appeal was at once issued, with the result that the authorities have been able to claim the generous donation.

The Brentry Homes

The annual report of the visitor to the Brentry Certified Inebriate Reformatory has lately been read. There were in the house 14 women and two men from Birmingham, all the beds allotted to the city being occupied. In reply to questions Mr. J. C. Lord, the visitor, stated that the city council had contributed about £2000 towards the building of the homes and for that contribution it had 15 beds. It paid 6*d.* a day for each inmate but for patients above the number of 15 it had to pay 1*s.* per day. The visitor considered the results satisfactory but expressed the opinion that the homes were best adapted for reforming young people who should be sent there on the three years' system.

Tame and Rea Drainage Board.

At the next meeting of this authority a recommendation will be made that storm-water filters on the bacterial system be constructed to deal with the storm-water before it is admitted into the river. For this purpose a site of about 30 acres will be required. Such a site in the neighbourhood of the pumping station is available. The cost is estimated to be £63,000. The scheme if adopted will be laid before the Local Government Board.

Jan. 15th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

One Variety of Preventable Infant Mortality.

ONE mode of destroying infant life seems to be put in operation very regularly at the "week end," according to the experience of the Manchester city coroner. Week after week the same story is told. Sometimes the cases are fewer, at other times there are more, but it is rarely that a week passes without one or more children being put to death in Manchester by suffocation. The verdict usually calls it "accidental" suffocation, but now and then the jury seem to have doubts, as in the following case. The month old child of a labourer was found dead in bed one Sunday. The parents and two children slept in the bed, and though the jury thought the suffocation accidental they asked the coroner "to say a word" to the parents as to four sleeping in one bed. At the end of December last, during the festive season commemorating the birth of Christ, the coroner held inquests on four children in one day who had thus been suffocated. He said that as long as mothers took their infants to bed with them "juries would be troubled with cases of this description." He remarked on "the extraordinary fact" that nearly all such cases occurred at the week end or at a holiday time and yet he "could never find any trace of the parents having been under the influence of drink." Nevertheless we all feel morally certain that drunkenness is the cause of the special incidence of this loss of infant life at these seasons. Were it otherwise the only possible conclusion would be that the mothers deliberately and of malice aforethought smothered their children between Saturdays and Mondays. The coroner said on this occasion that "it was quite impossible to get evidence of drink," but if ever he did he would ask the jury to send the mother for trial on a charge of manslaughter. It is sometimes said that the mothers of these children are too poor to provide a crib for the baby, but a very small abstinence from drink would enable them at any rate to buy some empty orange-boxes. The scenes at the coroner's court do not tend to make us very hopeful for the future of a certain stratum of our town population.

Anthrax Inhaled.

An inquest was held on Jan. 8th at Bradford as to the cause of the death of a man, aged 47 years, who had been employed by a firm of wool-combers. It was stated that when anthrax was suspected he was inoculated with the Sclavo serum. Dr. F. W. Eurich, the corporation bacteriologist, said that "in all probability the disease had been contracted by inhaling and that the spores had entered the system not more than three or four days before death." The death toll levied by this "free import" or "raw material" is surely heavy enough to justify more thorough methods of disinfection than are used at present before this dangerous stuff is given into the hands of the workmen.

Gas in an Electric Standard.

Towards the end of last week Manchester thought of little but the approach of the electoral struggle which culminated on Saturday. On the previous Monday, however, a large crowd of people were interested in the vagaries, or, as it is reported, "the strange effects" of an escape of gas. The leakage was at the base of one of the poles supporting the overhead equipment of the tramways, into which it had found access and then in some unknown way had become ignited. The electrical equipment became so much heated that the running of the trams had to be stopped. The repairing wagon from Hyde-road was brought and the flames were extinguished, but the escape of gas had been serious and excavations on each side of the road were necessary. These occurrences show that if we make use of such agents as gas and electricity they require more care and watchfulness than they sometimes get.

Unsuitable Mortuary.

At a recent inquest the medical man, Mr. C. S. Redmond, complained of the state of the Cavendish-street mortuary and asked the coroner to lay the matter before the corporation.

He did not think in all his experience that he had conducted a necropsy in more difficult or almost impossible circumstances. There was no natural light and gas was used, "which was practically illegal, because there were certain stains which could not be seen under gaslight." There were no facilities for making an examination. This is not the state of things one would expect in Manchester and the coroner promised to forward the complaint of the unsatisfactory condition of the mortuary to the corporation authorities.

Charities.

Mr. James Wilcock, J.P., of Blackburn, chairman of the Refuge Assurance Company, has celebrated his sixtieth birthday by giving £3500 to local charities, £1000 being devoted to endowing a bed at the Blackburn and East Lancashire Infirmary.

Jan. 16th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

The Medical Officer of Health of Wrexham.

EARLY in 1905 an inspector of the Local Government Board, in a report upon the sanitary administration of the district, advised the appointment of a medical officer of health who should act jointly for the rural and urban districts of Wrexham. An opportunity shortly arose for carrying out this proposal which was favourably received by the members of the rural council. The Wrexham town council, however, was averse to making a joint appointment and decided by a small majority to elect a medical officer of health for the borough alone. The Local Government Board has urged a reconsideration of this decision and the matter has been referred to the sanitary committee of the town council so that it is hoped that the joint scheme may even now be carried out. The population of the rural district is nearly 60,000 and of the borough about 15,000.

Bristol Dispensary.

The Bristol Dispensary was established in the year 1775 for the relief of the sick poor in their own homes. The headquarters of the institution are at Castle Green and there is a branch at Bedminster. A bequest of £4000 received last year will probably enable the board of managers to create a second branch in another part of the city and to add to the number of the staff by electing a ninth medical officer. The annual report of the dispensary states that during 1905 there were attended 10,041 patients compared with 11,842 in the previous year. This decrease is attributed to the milder winter and to the absence during the year of any serious epidemic in the city.

The Medical Officer of Health of the Combined Gloucestershire Districts.

The action of the Chipping Sodbury rural district council in not electing Dr. F. T. Bond as its medical officer of health and consequently withdrawing from the combined Gloucestershire sanitary districts has been already alluded to in THE LANCET. At the meeting of the Chipping Sodbury rural district council, held on Jan. 10th, a letter was read from the Local Government Board, stating that it could not alter its decision in reference to the appointment of the medical officer of health and added that instructions had been given to issue an order to effect it.

Small-pox at Plymouth.

At the meeting of the Plymouth borough council, held on Jan. 8th, a discussion arose over the cases of small-pox occurring in the town and one of the members asked the medical officer of health if some of the statements could be kept out of the newspapers and suggested that every time a case of small-pox was discovered he sent a telegram to the newspapers. The medical officer of health, in his reply, stated that he was acting under the guidance of the sanitary committee and added that the population of Plymouth was not protected by sufficient vaccination and revaccination.

Jan. 15th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Annual Report for 1905 of the University of Edinburgh.

THIS report shows that for the past year the total number of matriculated students at the University of Edinburgh was 3165 (including 385 women), which is the highest number reached for 12 years. Of the total number 982 (including 336 women) were enrolled in the Faculty of Arts, 290 (including nine women) in the Faculty of Science, 52 in the Faculty of Divinity, 320 in the Faculty of Law, 1500 (including 25 women) in the Faculty of Medicine, and 21 (including 15 women) in the Faculty of Music. The number of women attending extra-academical lectures with a view to graduation in medicine in the University was 89. Of the students of medicine 677, or 45 per cent., belonged to Scotland; 336, or over 22 per cent., were from England and Wales; 119 from Ireland; 70 from India; 272, or over 18 per cent., from British colonies; and 27 from foreign countries. The number of students from outside Scotland is greater than for some years past. The number of persons on whom medical degrees were conferred during the year was as follows: M.B. and C.M., 5; M.B., Ch.B., 192 (including 9 women); M.D., 76 (including 2 women); and Ch.M., 1. The general council of the University now numbers 9870. The diploma in tropical diseases was conferred on 77 candidates (including 6 women). With reference to the Carnegie Foundation, the report says that it has had little appreciable influence in increasing the number of students, but that it continues to be noticeable that many who avail themselves of the section of the scheme which provides for the payment of fees take out a larger number of classes than they would probably otherwise have done. Grants have been made during the year in augmentation of the salaries of several of the University lecturers and for the supply of apparatus to several departments, while an annual grant of £1000 is made to the library for the purchase of books. The report also refers to the institution of a diploma in tropical medicine and tropical hygiene (D.T.M. & H.), in connexion with which Dr. J. H. Ashworth has been appointed to give a course of instruction on disease-carrying insects and venomous animals, and a course on tropical hygiene will shortly be given in the public health department by the professor and Dr. J. Buchanan Young. A new advanced course of 25 lectures in chemistry has also been authorised. Extended provision has also been made for the teaching of clinical surgery by the assignment to Professor J. Chiene of definite duties in that department. Reference is made to the retirement of Professor A. R. Simpson and to the appointment as his successor of Sir John Halliday Croom. Reference is also made to the resignation of Sir Henry D. Littlejohn after holding the chair of medical jurisprudence for eight years. The report expresses its regret at the death of Emeritus Principal Sir William Muir.

Passes at the Medical Preliminary Examination.

In this examination for entrance to the Scottish universities the following is the percentage of passes of the candidates who entered for the four requisite subjects: St. Andrews, 33·33; Glasgow, 33·33; Aberdeen, 27·27; and Edinburgh, 35·21: all four universities, 33·83.

Edinburgh Royal Infirmary.

The report by the managers of the Edinburgh Royal Infirmary for the year from Oct. 1st, 1904, to the same date in 1905 was issued on Dec. 29th. The total number of patients treated during the year had been 11,016. Of these 4746 were cured, 3554 were relieved, 1138 were discharged on other grounds, and 792 died. At the end of the year 786 patients remained under treatment in the wards. Of the cases which had terminated one way or another 4176 were medical and 6052 were surgical. The average daily number of children under treatment was 80 and the average daily number of patients was 828. The average periods of residence of patients had lengthened somewhat. In the medical wards the average period of residence was 31·5 days, against 28·8 days in 1904. In the surgical wards (excluding the lock wards) the average was 26·3 days, against 25·2 in 1904. In the lock wards the average stay was 21·8, against 19·5 days in 1904. Of all cases admitted 5467 were drawn from Edinburgh, 410 from Leith, and 4349 from the country. Of the deaths 162 took place within 48 hours after the patient's admission, having mostly occurred in cases of severe injury or of a hopeless nature, and these unduly raised the rate of mortality. In addition to the 11,016 cases treated in the wards, 34 564 cases had received treatment in the medical and surgical waiting rooms. The ordinary income amounted to £33,729 19*s.* 4*d.*, or £84 8*s.* 1*d.* less than the previous year. On voluntary contributions there was a net increase of £139 7*s.* 3*d.* and there was an increase of £42 9*s.* 4*d.* on interest, but in all the other items on this side of the accounts there was a decrease. The ordinary expenditure amounted to

£50,143 11s. 5d., or £335 8s. 7d. above that of the previous year. This, however, was more than accounted for by an increase of 18 in the average number of beds occupied. The entire ordinary expenditure was £60 11s. 2¼d. per occupied bed, a decrease of 16s. 7¼d. on the previous year. The legacies and donations of £100 and upwards amounted to £14,311 12s. 1d. The capital expenditure amounted to £13,151 16s. 6d. This expenditure mainly consisted of sums to account as follows: drainage and plumbing reconstruction works, £5561; new surgical out-patient theatre and reconstruction of the waiting and examination rooms, £4027; new disinfecting station and workshops, £803; and new medical electrical department, £762. The managers especially directed attention to the fact that the total income of the Royal Infirmary failed to meet the ordinary and extraordinary expenditure of the year by the large sum of £16,478 16s. 9d. The average number of nurses and probationers was 233. There were 794 applications for admission against 732 in the previous year and 642 in 1903. The new surgical out-patient department was now completed. Among other new works was the completion of the medical electrical department and an improved telephone system which would shortly come into operation. The report closed with a renewed appeal for a continuance of financial support.

Scottish Poor-law Medical Officers' Association.

The annual report of this association for the year 1905 opens with a reference to various desiderata, the chief of which are: (1) that Poor-law medical officers should be put in the same statutory position as medical officers of health—i.e., made dismissible only by, or with the consent of, the Local Government Board; and (2) that drugs should not be included in the salary or compounded for in a lump sum. The members are urged to bring the claims of the Poor-law medical officers before the candidates at the present Parliamentary election. In the last Parliament a large number of the Scottish members were in sympathy with these claims and the report expresses the thanks of the association to Mr. Cathcart Wason and to Mr. Alexander Cross for their exertions in behalf of the medical officers. The work of the association has included much correspondence with members who ask advice on many points, the greater number being in connexion with parish councils interfering with the medical officer's private practice. The secretary of the association (Mr. W. L. Muir, 1, Seton-terrace, Glasgow), has been presented with a piece of silver plate in recognition of his services.

University Statistics.

Interesting official statistics have just been issued with reference to the number of matriculated students at the Universities of Edinburgh and Glasgow during the past 17 years. In both Universities the total number of students is less in 1905 than it was in 1889. At Glasgow in 1889 there were 818 students of medicine and in 1905 there were 645. From the year 1889 the number of students gradually diminished until 1901, when only 588 students enrolled in medicine, but since 1901 there has been a distinct rise in the numbers. The causes of this decrease during the past 15 years are various, perhaps the most potent factor being the higher standard demanded of candidates in the preliminary examination. The slight increase again during the last four years can probably be explained by the incidence of the Carnegie Fund which came into operation about the beginning of that period. In studying the statistics it has to be borne in mind that the Faculty of Science was only constituted in 1893 and that previously to that the science students (numbering 248 in Glasgow in 1905) were included in arts and medicine, so that the decrease in numbers in the Medical Faculty appears more striking than it probably is in reality.

Asylum Nurses' Dispute.

The Glasgow parish council has had under consideration the case of five charge nurses recently dismissed by the superintendent of Gartloch Asylum. It appears that for some time the nurses at this asylum have not been satisfied as regards the length of time during which they are on duty and last December they sent to the clerk of the parish council an ultimatum in the shape of a round robin which read as follows:—

> We, the undersigned, refuse to come on duty on the morning of 11th Dec. when the short leave comes into force. We are now working 84 hours per week, exclusive of extra duty, which amounts to about 91 hours, and we refuse to work an hour longer than we are doing at present, day and night staff combined.

This was signed by 62 nurses out of 66 in the asylum. The matter was remitted to the superintendent of the asylum to be dealt with and he dismissed five charge nurses on the ground that they had been long in the institution and that being nurses of standing it was their duty to put down insubordination. At a recent meeting of the parish council it was pointed out that the increase in the nurses' hours was largely due to the action of the Commissioner in Lunacy who recently expressed the opinion that the asylums at Gartloch and Woodilee were the most expensively conducted institutions of the kind in Scotland. After some discussion it was decided by a majority to support the superintendent in the action which he had taken but at the same time not to exclude the dismissed nurses from the chance of employment in some other institution under the control of the parish council.

Glasgow Victoria Infirmary.

The new ward pavilion at the Victoria Infirmary was opened last week by Lady Blythswood. The new pavilion is four storeys in height. The wards are 74 feet long and 26 feet wide, with accommodation in each for 18 beds, thus making an increase of 76 beds for the accommodation of patients. In addition an extension has been made to the nurses' home. The plenum system, previously adopted in heating and ventilating the various ward pavilions, has been applied to the new building, but the new installation is separate and distinct from the old.

Greenock Infirmary and Accident Cases.

The directors of the Greenock Infirmary have laid down a rule that seamen from ships in the harbour are to be refused admission to the infirmary unless their board is guaranteed by the masters or owners of the ships to which the seamen belong. It has been suggested by them, however, that if the parish council could see its way to guarantee the board in the event of their not being able to recover it from the owners or masters of the ships in that case they would be glad to admit any sick seamen from ships touching at the port. The rate of board in the hospital is one guinea per week but the directors, in view of an arrangement, are willing to modify this. The parish council is considering the matter.

Jan. 16th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS)

Apothecaries' Hall of Ireland.

THE governor of the Apothecaries' Hall of Ireland, Lieutenant-Colonel F. G. Adye-Curran, A.M.S. (retired), M.D. Dub., entertained the Provost of Trinity College, the President of the Royal College of Physicians of Ireland, the President of the Royal College of Surgeons in Ireland, and many other guests at dinner in the Gresham Hotel on Jan. 13th. The Provost in his speech remarked that he did not wish to say anything on the question of university education in Ireland; it was his business to serve the interests of Trinity College and let other institutions work for success on their own lines. Sir William Smyly responded on behalf of the Royal College of Physicians, Sir Arthur Chance, in responding for the Royal College of Surgeons, referred to the question of medical reform. Sir Christopher Nixon replied on behalf of the Royal University and Sir Charles Cameron, C.B., in proposing the Apothecaries' Hall of Ireland, said that it was the oldest medical incorporation in the British empire.

Fleet Surgeon John P. J. Coolican.

Fleet Surgeon John P. J. Coolican died on Jan. 15th at his residence, Clarinda Park, Kingstown. He was staff surgeon of the *Thetis* during the South African war and in November, 1899, landed with troops for the defence of Durban, after which he was awarded the South African medal. Owing to failing health he retired as fleet surgeon R.N. He was well known in Dublin and married the daughter of Sir George Moyers, D.L., J.P.

Nursing Reform in the North Dublin Union Infirmary.

This matter still engages public attention. A protest appeared recently from the Irish Nursing Association against the proposed reform, especially as regards the establishment of a school for probationers in connexion with the North Dublin union. A long and complete rejoinder was published in the *Irish Times* of Jan. 13th from Mr Caleb J. Powell who is to such a large extent responsible for the new scheme. Even after the strong recommendation of

the Irish Local Government Board, conveyed by its medical inspector, Dr. E. C. Bigger, the motion in its favour was carried by a majority of one only. It seems probable, therefore, that the guardians will succeed in postponing this necessary reform, including the removal of the pauper so-called nurses who have proved so notoriously deficient.

County Monaghan Infirmary.

At the monthly meeting of the committee of this infirmary, held on Jan. 10th, it was reported that during 1905 there were 361 patients, of whom 14 died and 30 still remained in the institution. A suggestion that additional probationers who would act as laundrymaids should be taken into the institution was wisely dropped. Such a plan would lower the standard of the nurses in the infirmary.

Royal Victoria Hospital, Belfast.

One of the objections made by some to the plenum system of ventilation and heating in the Royal Victoria Hospital, Belfast, was the alleged expense which it entailed. During the first 12 months (1903-04) for the heating and ventilating of all the wards (300 beds), for the heating by radiation of the two administration blocks (nursing and medical residential), for the cooking by steam, for the working of the laundry, for the sterilising of the instruments and dressings, and for the provision of hot water in all the wards, 1748 tons of coal were used at a cost of £1021 3*s.* 5*d.* During the second year (all steam traps and appliances being properly adjusted)—that is, from Oct. 1st, 1904, to Sept. 30th, 1905—1378½ tons of coal were used, at a cost of £832 16*s.* 2*d.*, so that the total expense is falling.

Belfast Municipal Elections.

At the usual Belfast municipal elections held this week the High Sheriff (Dr. H. O Neill) was re-elected as councillor for St. George's ward.

Jan. 16th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Fight against Tuberculosis.

A SHORT time ago an appeal was addressed by the Vice-Rector of the Paris Academy to the scholars at boys' and girls' schools in reference to the work of the Association for the Protection of Child Life against Tuberculosis. In every school the scholars responded gladly to this appeal and in one school the head master has had the appeal printed and a copy thereof given to every scholar. The results have been remarkable—the scholars have promised monthly or yearly subscriptions and donations have also been given. They have also founded an association, membership of which is open to subscribing scholars during their school time. Two members in every class elected by their class-mates constitute the committee of the association and this committee elects from its own members an executive committee. These two committees have already been elected at the Lycée Condorcet and the head master has been chosen as honorary president of the association.

The Influence of Heat on the Development of so-called Spontaneous Tetanus.

At the meeting of the Academy of Medicine held on Jan. 2nd M. Kelsch read a paper in which he quoted the experiments of M. Vincent showing that a high temperature brings about circumstances favourable to the development of the bacillus of Nicolaier and that this harmful influence of heat can show itself at a date relatively long after inoculation. This explains why symptoms of tetanus sometimes appear long after the wound has cicatrised. M. Vincent in a recent series of experiments has shown that in animals whose temperature has been raised a leucolysis occurs which acts with special force upon the phagocytic cells. Hence arises a weakening of the resistance of the organism to microbial invasion. The results would appear to be applicable to human pathology, for it is well known that it is in hot countries that tetanus attains its greatest virulence. The influence of heat, however, does not seem to be established as an absolute fact, for other observers, especially military surgeons, have shown that lowering of the temperature also seems to increase the virulence of tetanus.

Resection of the Shoulder-joint.

At the meeting of the Société de l'Internat held on Dec. 28th, 1905, M. Péraire showed a patient on whom some three years ago he had performed resection of the head of the humerus for complete ankylosis of the shoulder-joint. The patient, who was in a very weak state of general health, recovered completely. Nearly all the normal movements of the joint were restored and the muscles were just as firm and healthy on the one side as on the other. The patient, who was a woman, could easily lift a three pound dumb-bell. M. Péraire laid great stress upon the technique employed by him—namely, a vertical incision of the skin and other tissues covering the joint with a horizontal suture of the wound. In this way the end of the humerus was able to approximate to the glenoid cavity. No immobilisation had been carried out and within a few days after the operation the patient could do her work. The case was a good example of conservative treatment applied to tuberculous arthritis.

The Action of Maretine[1] in the Fever of Pulmonary Tuberculosis.

M. Rénon and M. Verliac have been using maretine in the fever of tuberculous patients and especially in those who have extensive cavitation in the lungs. In order to avoid possible causes of error the patients, before beginning the maretine, were kept for eight days completely at rest and under the *régime* usually employed in the wards in the charge of the two observers. The maretine was then administered on ordinary bread in doses of 25 centigrammes for a man and 15 centigrammes for a woman. Two doses a day were given, at 11 A.M. and at 5 P.M. The temperature was taken four times between 6 A.M. and 6 P.M. In nine-tenths of the cases the temperature fell as a whole and that without any attacks of sweating or of malaise. M. Rénon and M. Verliac gave an account of their researches at the meeting of the Society for Research into Tuberculosis which was held on Dec. 14th, 1905. They consider that in cases of pulmonary tuberculosis maretine has an undoubted action in lowering the temperature; that this action is most marked on the first day of administration; that complete tolerance (*accoutumance*) of the drug is established in the majority of cases by the end of the fifteenth day; and that directly the drug is left off the temperature rises again. Finally, it may be given in daily doses of 30, 40, or 50 centigrammes. It does not give rise to sweating, neither does it increase such as may already exist.

Extraction of an Artificial Denture from the Œsophagus by Gastrotomy.

On Jan. 10th M. Chaput read before the Society of Surgery an account of a case under the care of M. Bluysen. The patient was a man who, 15 days after he had swallowed his false teeth, called in M. Bluysen. The patient had only complained of pains within the last few days. M. Bluysen located the denture at a distance of 30 centimetres from the dental arch and therefore determined to perform a gastrotomy in preference to an œsophagotomy. Having opened the stomach he attempted to remove the denture with a pair of forceps passed into the œsophagus through the cardiac orifice, but failing in this manœuvre he passed a bougie from the mouth almost into the stomach and with this as a guide he was able to pass his index finger into the œsophagus by way of the stomach and to remove the denture.

Jan. 17th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

Vaccination in Turkey.

As in certain parts of the interior the population stubbornly refuses to submit to the existing laws of compulsory vaccination and, as in consequence of that, small-pox exists in rather alarming proportions in some provincial districts, the Sadrazan has given orders to the authorities to use every means at their disposal in order to make the ignorant classes of the people respect the law which makes vaccination obligatory. These authorities have at the same time to see that the vaccine lymph is prepared with every possible care and attention. It has been decided to establish a vaccination institute at Medina, the site of Mahomet's tomb.

The Attendance of Students in the Turkish Medical Schools.

The Ministry of Public Instruction has formulated a

[1] Maretine is a German preparation of which the chemical name is carbaminate of toluyl hydrazine.

decision which will henceforward make it impossible for medical students to enter for their professional examinations if they have missed, from whatever cause, half their attendances. If the same unsatisfactory attendance repeats itself during the following session the student will be excluded from the medical school, unless he is able to produce trustworthy evidence of his not having been able to attend.

A Crusade against Quacks.

The Turkish physician Dr. Nouri Effendi has made a tour in the provinces and has reported a deplorable state of affairs occasioned by the utter ignorance of the population to meet the difficulties arising out of different contagious maladies. They never attach any importance to the first manifestations of the disease but in later stages they call in all sorts of persons professing to be well versed in occult sciences. These persons attribute every malady to an evil eye. Their routine treatment is to administer a potion of water into which melted lead has been dropped, the draught to be taken during the recital of an incantation. The shapes assumed by the lead dropping into the water are pointed out to have various, generally menacing, significances. Other quacks have the habit of prescribing a diet which has to last 70 days and which consists of dry bread without salt. If the condition disappears the skill of the quack has to be praised. If the disease persists then it is due to the unhappy star of the patient's destiny. Dr. Nouri Effendi declares also that in consequence of such quackery and ignorance preventable and curable maladies are propagated with disastrous results.

A Society for the Protection of Children in Constantinople.

There exists in Constantinople, under the patronage of the Spanish Minister, the Marquise Camposagrado, and many well-known members of the upper classes of the city, a society for the purpose of the protection of infants, foundlings, and small children generally. This society possesses a hospital where little ones of every race and denomination receive the best care and treatment that can be provided for them in the city.

The Pilgrimage to Mecca.

Telegrams received from Mecca announce the arrival of great multitudes of pilgrims and report also the comparatively satisfactory condition of health that prevails. 9836 pilgrims have arrived at Djeddah from India, 10,345 came from Java, 3212 from South Africa, and 7290 from the north of that continent 21,841 pilgrims left Camaran on Jan. 4th. These numbers give a good idea of the wide extent of the Islam pilgrimage and of the great difficulties which the sanitary authorities have to contend with in order to prevent the spread of contagious disease.

A New Hospital at Maan.

A telegram from Maan on the great Oriental railway of Hedjas announces the inauguration there of a new hospital with 70 beds. The opening of it took place on Jan. 2nd in the presence of the Chief of the Sacred Caravan and numerous pilgrims.

Jan. 12th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Hospital Affairs.

THE new buildings of St. Vincent's Hospital, Melbourne, were formally opened by the Governor of Victoria on Nov. 5th. His Excellency in declaring the hospital open said that no one could fail to be struck with the great liberality with which various public institutions, and especially hospitals, were supported in Victoria. The building now opened was magnificent, because built on a sufficient scale, and was replete with every convenience and appliance which could be devised by medical science. He hoped that it would be a model to be copied, for he felt sure it would be a long time before they saw anything better. The Premier said that the equipment of St. Vincent's Hospital was such that it would be called on to bear more than its fair share of tending the sick. Before long the Government intended to make more people join in contributing to charitable institutions. People who could afford to go to races and amusements should be compelled to contribute to the charities. The municipalities also did not give sufficiently to hospitals. A collection in aid of the funds of the hospital was made and £2000 were received. The new building is of brick, consisting of one pavilion of four storeys, with administrative and operating block, and some special wards, surrounded by wide balconies. Each main ward accommodates 20 beds, is 71 feet long, 26 feet wide, and 16 feet high, perfectly ventilated and lighted, and fitted with every modern convenience. As in the operating theatres all the water used throughout the hospital is both filtered and sterilised by a Salvator sterilising machine. The kitchen is on the roof and the building is thus freed from all odours and smoke.—On Nov. 23rd the Earl of Jersey laid the memorial stone of the extension to the Nurses' Home at the Royal Prince Alfred Hospital, Sydney. The ceremony was under the auspices of the Grand Lodge of Freemasons of New South Wales, of which Lord Jersey is a Past Grand Master. Professor Anderson Stuart, chairman of the board of directors, said that the first portion of the Nurses' Home was commenced in 1890. The building was opened by the Earl of Jersey in 1892. Since then the hospital had been extended by the erection of the Queen Victoria Memorial Pavilions and the number of nurses correspondingly increased, so that the Nurses' Home became too small. Of the 60 odd nurses on the staff in 1892 not one remained now. Lord Jersey, after declaring the stone "correctly laid according to the rules of our ancient craft," said that one of the features which must strike those who come to Australia is the desire to do something for those who may be attacked by sickness. It was right that those who devoted their lives to caring for the sick, the nurses, should have every care and attention and that the rest of mankind should show their appreciation by making "homes" for them.—The committee of management of the Melbourne Hospital some time ago offered prizes of £300, £100, and £50 for designs for a new hospital. Many designs were sent in and the Victorian Institute of Architects was asked to examine them and to see if they complied with the conditions. The institute appointed its president and vice-president to do so and these gentlemen reported that all the designs complied with the requirements. The committee then asked the medical staff to inspect the designs and to select those which best satisfied its requirements. The staff ultimately selected three. Later representatives of the staff and the two architects met the building committee and again inspected and discussed the designs, giving reasons for their selection. Then the two architects and two representatives of the staff were asked to confer and to place the designs in order of merit. They did so and placed the plans marked S. A, and C, first, second, and third. The committee then voted and the voting was equal in favour of giving the design marked A the first prize. The meeting was adjourned, and finally the committee awarded the first prize to the design marked A and the third prize to that marked S. This reversal of the opinion of the expert committee has occasioned much adverse comment.—The refusal of the casualty surgeon at the Sydney Hospital to admit a dying patient has been adversely criticised. St. Vincent's Hospital, Sydney, has attached to it a hospital for the dying. The casualty surgeon at the Sydney Hospital, as there were no medical beds empty, told the police to take the dying patient to this hospital, which he believed to be a Government institution. The committee regretted that owing to an error of judgment on the part of the casualty surgeon the unfortunate circumstance had occurred but the committee had at the time formulated rules and made special provision for this class of case as well as for all accidents. The misapprehension of his plain duty by the casualty surgeon is regarded by the committee as inexplicable.—The asylum for inebriates on the Hawkesbury River, New South Wales, has been completed at a cost of £9000 but no provision has been made on the estimates for its maintenance. The institution was founded by the previous Government and some members of the present Ministry are said to regard it unfavourably.

The Sydney Abattoirs.

The Sydney abattoirs, situated at Glebe Island, are conducted by the Government and controlled by the Board of Health. The Premier has proposed that they should be taken over by the city council. After some consideration the health committee of the council has recommended that the terms of the Premier's offer should be accepted. Allegations have been made by the Sydney Labour Council to the effect that the inspection at the abattoirs was defective and

that diseased meat was allowed to be sent out for consumption. The president of the Board of Health, Dr. J. Ashburton Thompson, denies that there is any laxity of inspection but states that if the Labour Council will bring forward specific instances in such a way that they can be inquired into the Board of Health will direct a searching investigation.

Deaths from Alleged Illegal Operations.

Inquests have been recently held in Sydney on three deaths in which the circumstances pointed to the fact that criminal abortion had been procured. One case was adjourned; in another the coroner's court found that death resulted from general peritonitis as the result of a miscarriage which had been brought about by mechanical means, but what those means were or by whom they were used the evidence adduced did not enable him to say. In the third case the coroner found that death was the effect of an illegal operation and he committed Dr. F. W. Marshall for trial for wilful murder as well as a woman at whose house the operation was performed and a man supposed to have incited the crime.

Dec. 16th, 1905.

Obituary.

SIR JOSEPH EWART, M.D. ST. AND., F.R.C.P. LOND., M.R.C.S. ENG., F.Z.S.,

DEPUTY SURGEON-GENERAL (RETIRED), BENGAL ARMY.

THE news of the death of Sir Joseph Ewart at Brighton on Jan. 10th will be received with grief not only by many members of the medical profession but also by many personal friends both in this country and in India. Sir Joseph Ewart was born on Sept. 30th, 1831, in the county of Cumberland and was educated at the High School, Carlisle, until he joined the medical school of Guy's Hospital. In 1853 he became a Member of the Royal College of Surgeons of England and graduated M.D. of St. Andrews in the same year, when he entered the service of the Honourable East India Company. During the Indian Mutiny he was in charge of the Mehwar Bheel Corps at Kherwarra. While in India he commenced a series of investigations which enabled him to write a remarkable work, a "Digest of Vital Statistics of the European and Native Armies in India." The book contained suggestions on the preventable and avoidable causes of sickness and mortality amongst imported and indigenous troops. Immediately after its publication in 1859 he was appointed to the charge of the statistical office of India and was also elected to a professorship of medicine in the University of Calcutta where he subsequently became president of the medical faculty. Owing to failing health he was obliged to return to England in 1875, when he availed himself of the opportunity of passing the examination for the Membership of the Royal College of Physicians of London. Four years later he retired from the service, holding the rank of Deputy Surgeon-General, with the regrets of the Government which had trusted and appreciated him, of his brother officers who esteemed him, and of the great community, whether native or European in Calcutta, of which he had been the personal adviser and friend. He settled in Brighton and in 1881 was elected a Fellow of the Royal College of Physicians of London. In 1884, having taken an active part in the local affairs of the town, he was elected a member of the town council. He served on the watch, sanitary, and lighting committees and was a vice chairman of the Brighton School Board, and in 1891 was unanimously elected mayor, a position which he held for three years in succession, when his tact, energy, and high administrative ability resulted in many improvements to the town which reflected credit upon himself and the corporation. During his mayoralty his sister, Miss Ewart, acted the part of mayoress with great success, and her death five years ago was a great blow to her brother.

In 1895 Dr. Ewart's name was among the list of those who received the honour of knighthood on the occasion of Her Majesty Queen Victoria's birthday, and he unsuccessfully contested Brighton in the Liberal interest in the same year. He held many appointments and was a justice of the peace for the counties of Sussex and Cumberland and for the borough of Brighton. He was consulting physician to the Royal Alexandra Hospital for Children, vice-president of the Brighton Medico-Chirurgical Society, senior surgeon to the European General Hospital at Calcutta, and physician to Mysore Princes. His contributions to medical literature were considerable. For many years he was editor and proprietor of "Indian Annals of Medical Science." In addition to the work on vital statistics of the European and native armies already mentioned he was the author of "Sanitary Condition of Indian Gaols," a "Catalogue of Pathological Preparations in Calcutta Medical College Museum," "Review of the Treatment of Indian Diseases," and the "Poisonous Snakes of India"; and joint author of a report on Indian and Australian Snake Poisoning. He also published many papers in medical journals and in the Transactions of societies.

Sir Joseph Ewart led a strenuous but simple life. In India and in his English home alike he worked hard and with a single mind for the general good. That the health of the people is the first charge upon those who rule the people was the motto of his honourable career. He spent his life illustrating his principles.

JOHN LLEWELLYN TREHARNE, M.R.C.S. ENG., L.S.A., J.P.

Mr. John Llewellyn Treharne, a well-known resident in Cardiff, died on Jan. 10th at Pontllanfraith, where he had been living for some time. Mr. Treharne was a thorough Welshman and was born in Carmarthen in 1851, his father being Mr. John D. Treharne of Weston-super-Mare. In 1859 the family removed to Cardiff and in due course the deceased commenced the study of medicine at Guy's Hospital. In 1874 he took the diplomas of M.R.C.S. Eng. and L.S.A., and returned to Cardiff, where he was for some years in partnership with Mr. Lougher in Newport-road but ultimately carried on the practice alone.

Altogether he was engaged in professional work in Cardiff for nearly 30 years, during a great part of which period he was closely identified with party politics and municipal electioneering. In 1889 he was elected chairman of the Cardiff Conservative Association, an office which he held for seven or eight years. Mr. Treharne was at one time medical officer of Cardiff Prison and surgeon to the local police force. In addition to being a borough magistrate he had a seat on the Cardiff school board, and was a member of the council of University College, Cardiff.

WILLIAM CLEMENT DANIEL, M.D. HEIDELB., M.R.C.S. ENG., L.S.A.

Dr. William Clement Daniel, who died at Epsom on Dec. 30th, 1905, was one of the oldest and most respected practitioners in that part of Surrey. After a full curriculum at the University of Heidelberg, studying under Bunsen, Helmholtz, Chelius, Friedreich, and others, he graduated there in 1861, "insigni cum laude." He then entered Guy's Hospital, where he acted as clinical clerk to the late Sir (then Dr.) William Gull and as senior dresser in the eye department under Mr. Bader, and eventually took the diploma of M.R.C.S. Eng. in 1863 and that of L.S.A. in 1864. He subsequently joined the late Mr. Stilwell, with whom he conducted a private asylum which eventually passed into his own hands. In addition to the duties thus devolving upon him he was engaged in general practice and had a large circle of friends and patients, high and low, who were devoted to him. A long and tedious illness compelled him of late years to take some intervals of rest which he spent in travelling in Europe, Palestine, and North Africa. But as soon as he could he returned to his work, notwithstanding the unfavourable state of his health, and he literally almost died in harness.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Seux, formerly medical officer of the Marseilles hospitals.—Dr. Sachaalber, professor of ophthalmology in the University of Gratz, aged 41 years.—Dr. William S. Forbes, professor of anatomy in Jefferson Medical College, Philadelphia.—Dr. George W. Miltenberger, formerly professor of midwifery in the University of Maryland.—Dr. Th. Piéchaud, professor of the surgical diseases of children in the University of Bordeaux.

Medical News.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—The following gentlemen passed the Second Examination of the Conjoint Board in anatomy and physiology held on Jan. 4th, 5th, 8th, and 9th:—

Harold Wordsworth Leach Allott and Horace Rhodes Leach Allott, Sheffield; John James Harkness Beckton, St. Bartholomew's Hospital; Arthur Cecil Barker Biggs, University College Hospital; Owen Henry Bowen, St. Bartholomew's Hospital; Cuthbert John Butler, Charing Cross Hospital; David Howard Caine, St. Thomas's Hospital; Kaikhosru Kersapji Dadachanji, Bombay; Arthur Davies, Westminster Hospital; Horace Bernard Farrant, Birmingham University; Arthur Gordon Valpy French, St. Thomas's Hospital; Frank Austin French, St. Mary's Hospital; Cuthbert Izon Harmar and Joseph Cecil Harris, Birmingham University; Ernest Charles Holtom, St. Mary's Hospital; Alan William Holthusen, St. Bartholomew's Hospital; Harold Garnett Janion, University College Hospital; Hugh Braund Kent, Guy's Hospital; Stuart Hardy Kingston, University College, Bristol; Harry Lee, B.A. Cantab., Cambridge University and King's College Hospital; Michael Wellwood Morrison, Middlesex and King's College Hospitals; Mark Alleyne Nicholson and Bertram Charles Noble O'Reilly, London Hospital; George Packham, Guy's Hospital; Frederick Whitly Quirk, St. Mary's Hospital; Arthur Denys Rope, Middlesex Hospital; Arthur Bodley Scott, St. Bartholomew's Hospital; Charles Frederick Searle, B.A. Cantab., Cambridge University and Guy's Hospital; William Sidney Simpson, Charing Cross Hospital; Neil Frederick Sinclair, London Hospital; Paul Sinnock and Edmund Ralph Sircom, Bristol; Stuart Séguin Strahan, B.A. Oxon., Oxford University and St. Bartholomew's Hospital; Sheo Nandon Tiwary, Agra and University College Hospital; Francis James Wheeler, Guy's Hospital; and David Phillips Williams, M.A., Charing Cross Hospital.

76 candidates presented themselves for the above examination, of whom 36 were approved and 40 were rejected.

The following gentlemen were approved in practical pharmacy at the examination held on Jan. 11th:—

Gervase Disney Alexander, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Raymond Ebenezer Apperly, Middlesex Hospital; Patrick Black, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Lionel Hethorn Booth, Charing Cross Hospital; George Bowen, Herbert Vawdrey Capon, and Robert Malcolm Coalbank, St. Bartholomew's Hospital; Horace Charlton Devas, St. Thomas's Hospital and private; John McDougall Eckstein, St. Bartholomew's Hospital; Sandbrook Falkner and John Eugene Foreman, London Hospital and private; William Robert Greening, Guy's Hospital; Hother McCormick Hanschell, St. Bartholomew's Hospital; David George Harries, Edinburgh University, University College, Cardiff, and private; Walter de Marchot Hill, St. Bartholomew's Hospital; Ernest Emrys Isaac, University College Hospital and University College, Cardiff; Crichton Stirling Lee, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Harold Howard Leeson, St. George's Hospital; Thomas St. Leger Leyshon, London Hospital; Herbert Cecil Malleson, L.D.S. Eng., Guy's Hospital and private; Vernon Lickfold Matthews, London Hospital and private; Gordon Nevil Montgomery, Middlesex Hospital; George Ramsey Phillips, Guy's Hospital and private; Joseph Marshall Postlethwaite, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Arthur Tunna Rivers, Guy's Hospital; Gilbert Bodley Scott and Christopher Tylor, B.A. Cantab., St. Bartholomew's Hospital; Harold Rosser Styleman Walford, St. George's Hospital; Alan Geoffrey Wells, St. Mary's Hospital and private; and John Charles Wootton, St. Thomas's Hospital.

UNIVERSITY OF CAMBRIDGE.—At the examination for the degree of Master of Surgery held in December the following candidates were successful:—

C. B. Goulden, M.A., non-collegiate; and A. G. Wilson, B.A., Caius.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* The honorary title of Professor has been conferred upon Dr. Kurt Brandenburg, *privat-docent* of Medicine; Dr. Erich Hoffmann, *privat-docent* of Dermatology and Assistant to Professor Lesser; and Dr. Ferdinand Karewski, Chief Surgeon to the Out-patient Department of the Jewish Hospital. Dr. Hermann Be-itzke has been recognised as *privat-docent* of Pathological Anatomy and Dr. Bruno Salge as *privat docent* of Children's Diseases.—*Bologna:* Dr. Giuseppe Ruggi of Modena has been appointed Extraordinary Professor of Surgery.—*Bonn:* A chair of Social Medicine has been established to which Dr. Rumpf has been appointed.—*Breslau:* Dr. Leopold Heine, *privat-docent* of Ophthalmology, has been appointed Professor.—*Freiburg:* The late Professor Ziegler's chair of Pathological Anatomy has been offered to Professor Schmorl of Dresden.—*Halle:* Dr. Oskar Levy has been recognised as *privat-docent* of Pathological Anatomy.—*Harvard:* Dr. Franz Pfaff has been promoted to the Chair of Therapeutics and Pharmacology.—*Lund:* Dr. Ivar Broman of Upsala has been appointed Extraordinary Professor of Anatomy.—*Munich:* Dr. Josef A. Amann, *privat-docent* of Gynæcology, has been promoted to an Extraordinary Professorship.

THE GENERAL ELECTION.—Sir William J. Collins, M.D., F.R.C.S., late Chairman of the London County Council, has been elected Member of Parliament for St. Pancras (West); Mr. G. J. Cooper, M.R.C.S., L.S.A., for the Bermondsey division of Southwark; and Mr. F. Rutherford Harris, L.R.C.S. Edin., for the Dulwich division of Camberwell.

BRISTOL ROYAL INFIRMARY.—At the meeting of the committee of this institution held on Jan. 9th it was announced that up to the present £40,085 had been received towards the £50,000 required for the purposes of reconstructing the infirmary.

ROYAL BOTANIC SOCIETY OF LONDON.—A gift of £1000 from a Fellow, Dr. Robert Barnes, has been received by the council as a mark of confidence in its administration and in memory of his father, Mr. Philip Barnes, one of its original founders.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of this society was held on Jan. 10th at 11, Chandos-street, Cavendish-square, London, W., Sir Thomas Smith, Bart., vice-president, being in the chair. 16 members were present; one new member was elected and one resignation was accepted. The secretary reported that he had paid the sum of £603 to the annuitants of the charity as a Christmas present. The sum of £1376 was voted to be distributed, as half-yearly grants, among the 54 widows and 19 orphans in receipt of grants. Seven letters had been received during the past quarter from widows asking for relief, but this had to be refused owing to the fact that their late husbands had not been members of the society. Full particulars of the society and proposal forms for membership may be obtained from the secretary at the offices of the society. Membership is restricted to registered medical practitioners who, at the time of their election, are living within a radius of 20 miles from Charing Cross.

BIRTHS, DEATHS, AND VACCINATION IN EGYPT DURING 1904.—The population of Egypt on July 1st, 1904, was 10,386,423 natives and 112,447 foreigners. The native birth-rate was 45·4 per 1000, but similar information cannot be supplied regarding the foreign population because, in consequence of the capitulations, the Egyptian Government is unable to enforce registration. The native death-rate in eight principal towns with an aggregate population of 1,057,833 was 36·3 per 1000; in the provinces it was 25 4 per 1000, the rate for the whole of Egypt being 26·6 per 1000. The foreign death-rate is returned as 20·0 per 1000 for the entire country and this is probably correct as it is founded on the permits for burial, without which no dead body can be interred in the cemeteries. The number of vaccinations with success among natives was 436,672, and without success 2325, the total being equal to 93·1 per cent. of the births. 2918 individuals (presumably infants) were revaccinated with success and 513 without success. Among the primary vaccinations the percentage of failure was 0·5; among the revaccinations it was 17·5. In the foregoing statistics the Bedouins are not included. According to the census of 1897 the total number of these nomads in Egypt was 602,139. They were distributed all over the country but congregated chiefly in the province of Behera, where no fewer than 103,626 were located. In Sharkia there were 91,633 and in the outlying province of Fayoum 60,555. A tendency to become sedentary seems to be growing up among these wanderers, for they are to be met with more or less permanently settled in most of the towns. In Cairo there were 2571, in Alexandria 4984, and in Suez 7439.

BOOKS, ETC., RECEIVED.

ARNOLD, EDWARD, 41 and 43, Maddox-street, Bond-street, W.

Recent Advances in Physiology and Bio-Chemistry. Edited by Leonard Hill, M.B., F.R.S. Contributors: Benjamin Moore, M.A., D.Sc.; Leonard Hill, M.B., F.R.S.; J. J. R. Macleod, M.B.; M. S. Pembrey, M.A., M.D.; and A. P. Beddard, M.A., M.D. Price 18s. net.

A Manual of Pharmacology. By Walter E. Dixon, M.A. Cantab., M.D., B.S., B.Sc. Lond., D.P.H. Camb., &c., Assistant to the Downing Professor of Medicine in the University of Cambridge, Examiner in Pharmacology in the Universities of Cambridge and Glasgow. Price 15s. net.

Food and the Principles of Dietetics. By Robert Hutchison, M.D. Edin., F.R.C.P., Assistant Physician to the London Hospital and to the Hospital for Sick Children, Great Ormond-street. Revised edition. Price 16s. net.

BAILLIÈRE, J. B. ET FILS, 19, Rue Hautefeuille, Paris.

Les Actualités Médicales. Mouches et Choléra. Par A. Chantemesse, Professeur d'Hygiène à la Faculté de Médecine de Paris, Médecin des Hôpitaux, Inspecteur Général des Services Sanitaires, et Frédéric Borel, Directeur de la IIe. Circonscription Sanitaire Maritime, Lauréat de l'Institut. Price Fr.1.50.

Cours de Médicine Légale de la Faculté de Médecine de Paris. Les Blessures et les Accidents du Travail. Par P. Brouardel, Professeur de Médecine Légale à la Faculté de Médecine de Paris, Membre de l'Institut. Price Fr.15.

La Guérison de la Tuberculose Basée sur l'Etude des Cas de Guérison Spontanée, Traitement et Prophylaxie. Par le Dr. Paul Ferrier, Ancien Interne des Hôpitaux de Paris. Price Fr.2.50.

BROWNE, T. B., LIMITED, 163, Queen Victoria street, E.C.

The Advertiser's A B C. 1906. The Standard Advertisement Press Directory. Price 10s. 6d.

EASON AND SON, LIMITED, Mid. Abbey-street, Dublin.

The "Every Hour" Diary. 1906. Portfolio with Blotter, Pockets, &c. Price 1s. 6d.

Cabinet Scribbling Diary. 1906. With double index for rapid reference. Price 2s.

F. A. DAVIS COMPANY, 1914-16, Cherry-street, Philadelphia.

Lectures on Auto-Intoxication in Disease, or Self-poisoning of the Individual. By Ch. Bouchard, Professor of Pathology and Therapeutics, Member of the Academy of Medicine, and Physician to the Hospitals, Paris. Translated, with a Preface and new Chapters added, by Thomas Oliver, M.A., M.D., F.R.C.P., Professor of Physiology, University of Durham. Second revised edition. Price $2.00 net.

FISCHER, GUSTAV, Jena.

Mikroskopische Geschwulstdiagnostik. Praktische Anleitung zur Untersuchung und Beurteilung der in Tumorform auftretenden Gewebswucherungen. Für Studierende und Aerzte, besonders auch Spezialärzte. Von Prof. Dr. Friedrich Henke, in Charlottenburg-Berlin. Price M.14; geb., M.15.

GOWANS AND GRAY, LIMITED, 35, Leicester-square, W.C., and 58, Cadogan-street, Glasgow.

Ambulance Illustrated. Sixty Photographs taken by W. M. Warneuke, under the direction of Wm. Cullen, M.D. (Gowan's Practical Picture Books. No. 1.). Price 6d. net.

GREEN, WILLIAM, AND SONS, Edinburgh and London.

Surface Anatomy. By Richard J. A. Berry, M.D., F.R.C.S.E., F.R.S.E., Professor of Anatomy in the University of Melbourne; formerly Lecturer on Anatomy in the School of Medicine of the Royal Colleges, Edinburgh. Price 7s. 6d. net.

HEINEMANN, WILLIAM, 21, Bedford-street, W.C.

Beauty of Figure: How to Acquire and Retain it by means of Easy and Practical Home Exercises. By Deborah Primrose, of "Hearth and Home," "The World of Dress," "Myra's Journal," &c. With 72 illustrations, photographs from life. Price 2s. 6d. net.

JACK, T. C. AND E. C., Edinburgh, and 34, Henrietta-street, London, W.C.

The Edinburgh Stereoscopic Atlas of Anatomy. Edited by David Waterston, M.A., M.D., F.R.C.S.E., F.R.S.E., Lecturer and Senior Demonstrator in the Department of Anatomy, Edinburgh University. Section III. 81 plates (Abdomen and Pelvis and Lower Limb). Issued in five sections, at the price of £1 5s. net each section.

J. B. LIPPINCOTT COMPANY, Philadelphia and London.

Genito-Urinary Surgery and Venereal Diseases. By J. William White, M.D., John Rhea Barton Professor of Surgery, University of Pennsylvania, and Edward Martin, M.D., Professor of Clinical Surgery, University of Pennsylvania. Sixth edition. Price 21s. net.

Photographic Atlas of the Diseases of the Skin. (Physicians' Edition.) In Four Volumes. By George Henry Fox, A.M., M.D., Professor of Dermatology, College of Physicians and Surgeons, N.Y.; Consulting Dermatologist to the Department of Health, New York City; Physician to the New York Skin and Cancer Hospital. Vol. III. Price not stated.

KARGER, S., Berlin. (WILLIAMS AND NORGATE, 14, Henrietta-street, Covent-garden, London, W.C.)

Berliner Arzneiverordnungen mit Einschluss der physikalisch-diätetischen Therapie. Für Studierende und Aerzte. Nach der 4. Ausgabe des Arzneibuches für das Deutsche Reich zusammengestellt. Von Dr. med. Paul Reckzeh, Assistent der II. medizinischen Klinik zu Berlin. Mit einem Vorwort von Prof. Dr. Fr. Kraus, Direktor der Klinik. Price 3s. net.

Die Krankheiten des Beckenbindegewebes. Unter Mitwirkung von J. A. Amann, jr., München, O. Busse, Posen, und Pb. Jung, Greifswald. Herausgegeben von A. Martin, Greifswald. Price 14s. net.

Aerztliche Taktik. Briefe an einen Jungen Arzt. Von Dr. Fritz Schlesinger, Arzt in Berlin. Price 1s.

Uber Primäre Thoraxanomalien, speziell über die Starre Dilatation des Thorax als Ursache eines Lungenemphysems. Nach neuen im Pathologischen Institute des Krankenhauses im Friedrichshain (Prosektor, Dr. v. Hansemann) ausgeführten Untersuchungen. Von Wilh. Alex. Freund. Price 1s. net.

KING, P. S., AND SON, Orchard House, Westminster.

Women as Barmaids. Published for the Joint Committee on the Employment of Barmaids. With a Preface by the Right Rev. the Lord Bishop of Southwark. Price 1s. net.

LAURIE, T. WERNER, Clifford's Inn, Fleet-street, E.C.

The Cathedrals of England and Wales. By T. Francis Bumpus. Second series. Price 6s. net.

NEW SYDENHAM SOCIETY, London. (Agent: H. K. LEWIS, 136, Gower-street, W.C.)

An Atlas of Illustrations of Clinical Medicine, Surgery and Pathology. Compiled for the New Sydenham Society (A Continuation of the "Atlas of Pathology"). Chiefly from Original Sources. Fasciculus XXIV.bis. Being XVII. of the Clinical Atlas. Fractures and Dislocations of the Upper Extremity. Illustrated chiefly by Radiographs. Price to non-subscribers 10s. 6d.

OFFICE OF THE SUPERINTENDENT OF GOVERNMENT PRINTING, INDIA, 8, Hastings-street, Calcutta.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. New Series. No. 20. Serum-therapy of Plague in India. Reports by Mr. W. M. Haffkine, C.I.E., and various Officers of the Plague Research Laboratory, Bombay. Edited with an Introduction by Lieut.-Col. W. B. Bannerman, M.D., B.Sc., F.R.S.E., I.M.S., Director, Plague Research Laboratory, Bombay. Price not stated.

PHARMACEUTICAL JOURNAL OFFICE, 72, Great Russell-street, W.C.

The Chemist's Annual, 1906. Including a Chemist's Diary and Additions to the Pharmaceutical Journal Formulary. Edited by John Humphrey. Price 10s. 6d. net.

REBMAN, Limited, 129, Shaftesbury-avenue, W.C.

Biographic Clinics. Volume III. Essays Concerning the Influence of Visual Function, Pathologic and Physiologic, upon the Health of Patients. By George M. Gould, M.D., Editor of American Medicine, Author of "An Illustrated Dictionary of Medicine, Biology, etc." Price 5s.

ROUSSET, J., 12, Rue Monsieur le Prince et 1, Rue Casimir Delavigne, Paris.

Études sur le Traitement des Fractures des Membres. Fr. Guermonprez. Notes recueillies et mises en ordre par les Docteurs J. Guilloux, L. Kissendeck, J. Faidherbe, A. David, L. Merveille, et Ad. Platel, et revues par le Professeur. Price not stated.

SPRINGER, JULIUS, Monbijouplatz, 3, Berlin.

Die Arzneimittel-Synthese auf Grundlage der Beziehungen zwischen chemischem Aufbau und Wirkung. Für Aerzte und Chemiker. Von Dr. Sigmund Fränkel, Dozent für medizinische Chemie an der Wiener Universität. Zweite, umbearbeitete Auflage. Price M.16.

WILLIAMS AND NORGATE, 14, Henrietta street, Covent-garden, W.C. (Published for the University Press of Liverpool.)

Liverpool School of Tropical Medicine—Memoir XVI. Report on Trypanosomes, Trypanosomiasis, and Sleeping Sickness, being an Experimental Investigation into Their Pathology and Treatment. By H. Wolferstan Thomas, M.D. McGill, J. H. Todd Memorial Fellow, and A Description of the Tissue Changes, by Anton Breinl, M.U. Dr. (Prag.), J. W. Garrett International Fellow. Price 12s. 6d. net.

Liverpool School of Tropical Medicine—Memoir XVII. The Nature of Human Tick-Fever in the Eastern Part of the Congo Free State, with Notes on the Distribution and Bionomics of the Tick. By the late J. Everett Dutton, M.B. (Walter Myers Fellow of the Liverpool School of Tropical Medicine), and John L. Todd, B.A., M.D. McGill. And an Appendix on the External Anatomy of Ornithodoros Moubata, by Robert Newstead, A.L.S., F.E.S. Price 7s. 6d. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ANDREW, CHARLES T., M.B., Ch.B., B.Sc. Aberd., has been appointed Bacteriologist to the Hospital of St. John and St. Elizabeth, St. John's Wood, N.W.

BOWES, J. ARNOLD, L.D.S. R.C.S.E., has been appointed Dental House Surgeon at Guy's Hospital.

BURGESS, ARTHUR H., F.R.C.S. Eng., M.B., M.Sc. Vict., has been appointed Honorary Assistant Surgeon to the Manchester Christie Hospital for Cancer.

BURROWS, HAROLD, M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Seamen's Hospital, Greenwich.

DODD, STANLEY, M.A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P., has been appointed Resident Medical Officer at the Chelsea Hospital for Women.

GRAY, A. G., M.B., B.S. Aberd., has been appointed Bacteriologist to the Hospital of St. John and St. Elizabeth, St. John's Wood, N.W.

HAMILTON, ROBERT J., F.R.C.S. Eng., has been appointed Honorary Ophthalmic Surgeon to the Stanley Hospital, Liverpool.

HEANLEY, C. M., M.B., B.S. Lond., D.T.M H. Camb., D.P.H. Lond., has been appointed Assistant to the Government Bacteriologist at Hong-Kong.

JUBB, ARCHIBALD, M.D. Glasg., has been appointed Assistant Medical Electrician to the Glasgow Royal Infirmary.

KERRAWALLA, M. P., M.D. Brux., has been appointed Clinical Assistant at the Samaritan Hospital for Women.

MCBRIDE, JOHN, L.D.S. R.C.S.E., has been appointed Dental House Surgeon at Guy's Hospital.

MERCIER, C. A., M.B. Lond., F.R.C.S. Eng., F.R.C.P. Lond., has been appointed Physician for Mental Diseases at Charing Cross Hospital.

SCOTT, CHARLES WALTER, M.B., C.M. Edin., M.R.C.S., L.R.C.P. Lond., has been appointed a Clinical Assistant to St. John's Hospital for Diseases of the Skin, Leicester-square.

TELLING, W. H. MAXWELL, M.D., B.S. Lond., M.R.C.P., has been appointed Honorary Physician to the Meanwood Convalescent Home for Children.

TRIBE, R. H., M.R.C.S., L.R.C.P., has been appointed Clinical Assistant to the Victoria Hospital for Children, Tite-street, Chelsea.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BRISTOL, CITY AND COUNTY OF.—Public Analyst. Salary £450, rising to £600 per annum.

BURNLEY, COUNTY BOROUGH OF.—Medical Officer of Health. Salary £500 per annum.

BURTON-ON-TRENT INFIRMARY.—House Surgeon. Salary £120 per annum, with rooms, board, coal, and light.

CARDIFF INFIRMARY.—Two House Surgeons and one House Physician, each case for six months, renewable. Salary at rate of £80 per annum, with board, washing, and apartments.

CHELTENHAM GENERAL HOSPITAL.—Junior House Surgeon, unmarried. Salary £60 per annum, with board and lodging.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY.—Junior House Surgeon. Salary £50 per annum, with board, apartments, and laundress.

GLASGOW, CORPORATION OF.—Lady Medical Assistant. Salary £160 per annum.

HALIFAX, ROYAL INFIRMARY.—Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—Assistant Casualty Medical Officer, unmarried, for six months. Salary £20, with board and residence. Also House Surgeon, unmarried, for six months. Salary £20, with board and residence.

LEEDS HOSPITAL FOR WOMEN AND CHILDREN.—Resident Clinical Assistant for three months. Board, residence, and washing.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Physician.

PARISH OF BERMONDSEY.—District Medical Officer. Salary £125 per annum, with fees.

PARISH OF ST. MARY, ISLINGTON.—Medical Officer and Public Vaccinator for No. 9 District. Salary £100 per annum and fees.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer. Salary £80 per annum, with board, residence, and laundry.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Surgeon.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon, for six months, renewable. Salary £80 per annum, with board and residence.

SEAMEN'S HOSPITAL SOCIETY.—Pathologist. Salary £100 per annum. Also Assistant Physician, Medical and Surgical Registrar, and Honorary Anæsthetist.

SUNDERLAND INFIRMARY.—House Physician and Third House Surgeon. Salary £80 per annum, with board, residence, and washing.

WAKEFIELD, WEST RIDING ASYLUM.—Assistant Medical Officer. Salary £140, rising to £160, with apartments, board, washing, and attendance.

WEST HAM UNION.—Four District Medical Officers. Salaries £130 per annum, rising to £180, with fees.

WESTMINSTER HOSPITAL MEDICAL SCHOOL.—Lecturer on Mental Diseases.

WILLESDEN URBAN DISTRICT ISOLATION HOSPITAL.—Assistant Medical Officer, unmarried. Salary £125 per annum, rising to £200, with board, lodging, and washing.

YORK COUNTY HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

Births, Marriages, and Deaths.

BIRTHS.

ABERCROMBIE.—On Jan. 12th, at Upper Wimpole-street, the wife of John Abercrombie, M.D., of a daughter.

BROWN.—On Jan. 4th, at Carlton House, Gloucester, the wife of Walter Brown, M.B., of a son.

CORNER.—On Jan. 12th, at 37, Harley-street, W., the wife of Edred M. Corner, Esq., F.R.C.S., of a son.

HARRISSON.—On Jan. 9th, at The Priory, St. Neots, Hunts, the wife of E. H. Harrisson, M.B., B.C., B.A. Cantab., of twin daughters.

TANNER.—On Jan. 12th, at Farnham, Surrey, the wife of Charles Edward Tanner, M.D., F.R.C.S., of a daughter.

MARRIAGES.

BURGESS—WEARN.—On Jan. 9th, at St. John the Baptist's Catholic Church, South Hackney, Harold Lynch Burgess, M.R.C.S., L.R.C.P. Lond., Medical Officer, West African Medical Staff, to Mabel Elizabeth, eldest daughter of Arthur George Wearn, of Lindfield, Sussex.

HAY—DUNCAN.—On Jan. 17th, at St. George's Church, Tyldesley, by the Rev. J. Lund, M.A., John Hay, M.D., M.R.C.P., eldest son of James M. Hay, of Liverpool, to Agnes Margaret, daughter of William Duncan, M.D., of Tyldesley.

RYALL—BARKER.—On Jan. 16th, at All Saints' Church, Margaret-street, W., by the Rev. G. F. Holden, Edward Canny Ryall, F.R.C.S., of Harley-street, son of Edward Canny Ryall, late 86th Regiment, to Eveline, daughter of the late C. D. Barker, J.P., D.L., and of Mrs. Barker, Radnor House, Great Malvern.

SMARTT—ORMROD.—On Jan. 6th, at the parish church, East Coker, Walter Smartt, F.R.C.S. Irel., to Gladys Millicent, daughter of the late Colonel J. C. Ormrod.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

WHAT ADVERTISEMENT IS LEGITIMATE?

To the Editors of THE LANCET.

SIRS,—A cash surgery in the Shepherd's Bush neighbourhood, already sufficiently gaudy, has now blossomed forth as a huge election poster. The whole shop front, windows, sides, &c., are covered with election placards and cartoons, space only being left for notices to show that a medical man is at home between certain hours and that he speaks French, German, and Italian. All this at a surgery run by a man who, I believe, is attached to the London Hospital. I hardly thought it was considered the proper thing for a medical man to advertise his knowledge of different languages on his shop front or notify his qualifications to chance callers on printed cards. But the whole thing shows how easily one man may escape penalties and another incur them. I have in mind a man whose surgery I often stopped to look at who has had his name removed from the Register. His surgery is now being carried on by an M.D. U.S.A., whose chief stock-in-trade seems to be steel and pennyroyal pills, so that the community does not seem to have gained much by the suppression of the former medical man. I am, Sirs, yours faithfully,

Jan. 10th, 1906. T. R. W. ATKINS.

*** The conduct of the first medical man to whom our correspondent refers is most certainly to be deprecated, but if the case were brought to the knowledge of the General Medical Council we doubt if the medical man would be adjudged guilty of improper advertisement. The medical man to whom our correspondent refers as having been struck off the Register did not suffer the penalty of removal for simple advertising. He had associated himself with unqualified practitioners. He, after his first appearance before the Council, sold two of his practices, and in his own words, "did not care who bought them so long as he got some little money out of them." The person calling himself M.D. U.S.A., is, of course, a quack, but we fear that he is not amenable to the law as it stands.—ED. L.

THE DANGERS OF THE TELEPHONE.

A LAYMAN writes: "What is an 'empyrema' (goodness knows how it is spelt), please? I hope it is not an indelicate question. This morning my telephone bell rang and somebody told me that he had an empyrema which wanted immediate attention. I said how awfully jolly and that I should like to see it and that I thought it ought certainly to have every attention. Then the owner of the voice, who was perhaps puzzled by my reply, said that he was 'The London Hospital and would I be good enough to ring off.'"

A WARNING TO MEDICAL MEN.

To the Editors of THE LANCET.

SIRS,—A professional *confrère* and I have just been, to all appearance, victimised by a debt collector and I think it right that other medical practitioners should be warned against him, lest they, too, should give the collection of their outstanding debts to plausible rogues. Some three months ago a young man of business-like appearance and Scottish accent, giving a Scottish name, called asking on behalf of an accountant, also with a Scottish name and living in Pimlico, to be intrusted with the collection of accounts. He asked for commission of 15 per cent. on accounts collected. He presented me with a business card and apparently all was in order. Statements with remittances were promised quarterly or monthly as required, whereupon I gave him certain small outstanding debts to collect. The quarter was due at Christmas and as no word arrived from him I wrote to him but got no reply. Then I went to the address of the accountant and was informed by his landlady that he had removed about a month ago, leaving some rent unpaid. I am, Sirs, yours faithfully,

Jan. 11th, 1906. M.D.

A POINT OF DIAGNOSIS.

To the Editors of THE LANCET.

SIRS,—Referring to a letter appearing in your columns some weeks ago asking for a diagnosis of a peculiar condition of the gums in a patient living in California I would suggest that this is atrophic inflammation, described by Mr. C. S. Tomes in his "Dental Surgery." As regards the treatment, every source of irritation should be removed; applications of astringents to the gum, such as powdered tannin, should be made and an astringent mouth wash should be used several times a day. The pain may be relieved by painting the gums with equal parts of tincture of iodine and spirit of camphor. Give an aperient, such as sulphate or carbonate of magnesia or cascara sagrada and rhubarb, in small doses daily. I am, Sirs, yours faithfully,

Littlehampton, Jan. 12th, 1906. L. TAYLOR.

THE RIAPURE MACHINE FOR THE PURIFICATION OF AIR.

M. Gabriel Dubuis has submitted to us an apparatus which, it is claimed, will purify, disinfect, or perfume the air. It consists of a box containing a fan which is actuated by a motor. Underneath this fan is a trough which may be filled with water, disinfecting fluid, or with cloths soaked in disinfectants. The air is drawn over the trough

and driven out at the end of the box by the action of the fan. Doubtless the air, if not driven too fast, will be purified by its passage over the solutions and if erected on a large scale the apparatus should prove useful. In some experiments made by Mr. H. Candy, B.Sc., and Mr. P. A. Ellis-Richards, F.I.C., the apparatus proved to furnish a supply of air which is both bacteriologically and chemically purified. When air infected with bacillus prodigiosus was passed through the machine it was rendered sterile and the carbonic acid was reduced in another experiment from 25 parts per 10,000 to normal —i.e., 4 parts per 10,000. The small size which was submitted to us was but little more than a means of supplying a small stream of cooled or purified air which would be pleasant if placed by the bedside in illness. The apparatus may be obtained at 26, Hugh-street, Eccleston-square, London, S.W.

THE PUBLICATION OF DOMESTIC DETAILS IN SCIENTIFIC REPORTS.

To the Editors of THE LANCET.

SIRS,—I observe that in many lectures and addresses in THE LANCET the writers, when consultants, usually mention the names of the medical practitioners with whom they have seen the cases used as examples. This has always seemed to me to savour of advertisement. But there is a stronger objection to the practice—namely, that it adds to the risk of identification not only by the writer's medical brethren but by laymen. It is within my knowledge that medical journals lie regularly on the table of the Royal Exchange in one large city; if in one, perhaps in all. To me as a reader it is quite immaterial whether the case has been seen with Dr. C. G. M. or Dr. M. C. G. It seems to me sufficient to state that the case had been seen.

I am, Sirs, yours faithfully,
Jan. 1st, 1906. GREGORY.

*** Our correspondent has touched upon a difficulty which we have often felt. We disregard altogether his suggestion of advertisement if only because, on his own showing, the communications are not made to our columns by the persons whose names are mentioned, but the risk of identification of the patient is obviously increased by the mention of the name of the ordinary medical adviser, although the scientific value of the case as evidence is enhanced thereby. This is a censorious world and statistics have been adduced in favour of, or in opposition to, certain treatment which have been very much disputed. No possible suspicion can attach to the accuracy of a clinical history if the writer of the paper adduces as witnesses different medical men with whom he was associated in the treatment. There can be no hard-and-fast rule, but writers in THE LANCET are generally good enough in particular cases where difficulty may arise to follow the line which we indicate to them. Moreover, consultants doubtless mention the names as a matter of courtesy to the practitioners with whom they have consulted—ED. L.

WANTED—A SANATORIUM.

To the Editors of THE LANCET.

SIRS,—I should be much obliged to any of your readers who could tell me of any sanatorium which would take in a boy, aged 13 years, suffering from tuberculosis of one lung in the early stages. The boy is the son of a gamekeeper who could not afford to pay high fees.

I am, Sirs, yours faithfully,
Jan. 10th, 1906. M.B., B.C.

TYPHOID AGGLUTOMETERS.

To the Editors of THE LANCET.

SIRS,—In answer to "M.O.H.'s" inquiry respecting the reliability of Parke, Davis and Co.'s "typhoid agglutometer," I beg to say that I have tried it in two cases of undoubted typhoid fever and within two hours' time of taking the serum there was a well-marked reaction in each case. I observed, too, that on shaking the tubes containing the floccules the contained fluid became clear, but on being allowed to stand the reaction was well marked again within an hour.

I am, Sirs, yours faithfully,
Jan. 16th, 1906. M.R.C.S.

SUPERCILIARY GYMNASTICS.

To the Editors of THE LANCET.

SIRS,—I know a girl, 16 years old, who is able to raise one eyebrow and to depress the other simultaneously and alternately. I would like to hear if any of your readers are acquainted with people possessing this power, as it seems to me uncommon. I have never met anyone else able to move the eyebrows in this manner.

I am, Sirs, yours faithfully,
Jan. 16th, 1901. HARLEQUIN.

C. C.—"Vincent's disease," more properly called Vincent's angina, is a form of pseudo-diphtheria first described by Professor H. Vincent of Paris in 1898. A complete account of it, together with a very copious bibliography, will be found in two articles published in THE LANCET—one by Dr. H. W. Bruce on July 16th, 1904, p. 135, and the other in French by Professor Vincent himself on May 13th, 1905, p. 1260.

D. K.—The police alone can control the dissemination of filthy circulars. The specimen sent us is no more mischievous or beastly than many advertisements that appear in so-called respectable monthly magazines.

G. D. C. is thanked for his amusing inclosure. The note on the legal proceedings against the proprietors of "Bile Beans" will be found in THE LANCET of Sept. 16th, 1905, p. 860.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (3 P.M.).

TUESDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.).

WEDNESDAY (24th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.).

THURSDAY (25th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.).

FRIDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.).

SATURDAY (27th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (22nd).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—Council Meeting. 8.30 P.M. Gynæcological Papers:—Dr. C. Berkeley: Uncontrollable Vomiting in Pregnancy.—Dr. G. Blacker: Dilatation of the Cervix Uteri with Bossi's Dilator.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (20, Hanover-square, W.).—7 P.M. Council. 8 P.M. Casual Communication: Dr. A. G. Levy: A Modification of a Gas and Oxygen Apparatus.—Paper:—Capt. A. F. A. Howe: The Teeth of the Pigmies of Central Africa (illustrated with lantern slides and models).

TUESDAY (23rd).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.15 P.M. Cases will be shown by Dr. F. Taylor and Dr. Ewart. 8.30 P.M. Papers:—Dr. F. Taylor: Three Cases of Myoclonus.—Dr. W. Ewart: "Interrupted Circulation" as a Therapeutic Agent, with illustrative cases of Rheumatoid Arthritis.

THERAPEUTICAL SOCIETY (Apothecaries' Hall, Blackfriars).—4.30 P.M. Dr. G. N. Pitt: On Antithyroid Serum in the Treatment of Exophthalmic Goitre.

WEDNESDAY (24th).—SOCIETY OF ARTS (John-street, Adelphi, W.C.).—8 P.M. Paper:—Dr. J. Nisbet: The Planting of Waste Lands for Profit.

HUNTERIAN SOCIETY (London Institution, Finsbury-circus, E.C.).—8.30 P.M. Mr. J. Hutchinson: Reminiscences of the Hunterian Society. (Hunterian Lecture.)

THURSDAY (25th).—OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, W.).—8 P.M. Card Specimens will be shown by Mr. A. S. Morton and Mr. G. Coats. 8.30 P.M. Papers:—Dr. A. M. Ramsay: The Treatment of Detachment of the Retina.—Mr. S. Snell: (1) A Case of Thrombosis of the Cavernous Sinus; (2) A Case of Acute Œdema of the Eyelids.—Dr. D. J. Wood: Case of Bilateral Hemianopsia.

HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road, W.).—8.30 P.M. Clinical Meeting.

FRIDAY (26th).—CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M. Exhibition of Clinical Cases followed by discussion. Patients will be in attendance from 8 to 9 P.M.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (22nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. G. Little: Clinique. (Skin). 5.15 P.M. Lecture:—Dr. J. Morrison: The Management of the Breasts and Infant during the Early Days of the Puerperium.
POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Lloyd: Anæsthetics.

TUESDAY (23rd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. G. A Sutherland: Clinique. (Medical.) 5.15 P.M. Lecture:—Dr. W. S. Colman: Stammering.
POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Robert Jones: Mental Unsoundness amounting to Certifiable Insanity.
NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Clinical Lecture:—Dr. Ormerod: Hysteria.
NORTH-EAST LONDON POST-GRADUATE COLLEGE (Colney Hatch Asylum, New Southgate, N.).—3.30 P.M. Dr. H. Corner: Demonstration on States of Mental Depression.

WEDNESDAY (24th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. A. H. Tubby: Clinique. (Surgical.) 5.15 P.M. Lecture: Dr. B. Abrahams: The Treatment of Rheumatism.
POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Beddard: Practical Medicine.
UNIVERSITY COLLEGE HOSPITAL (Gower-street, W.C.).—4 P.M. Clinical Lecture:—Mr. S. Spokes: Oral Sepsis.

THURSDAY (25th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Lecture:—Mrs. M. Scharlieb: The Differential Diagnosis of Abdominal Tumours.
POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Baldwin: Practical Surgery.
CHARING CROSS HOSPITAL.—4 P.M. Dr. MacLeod: Demonstration of Dermatological Cases. (Post Graduate Course.)
SAMARITAN FREE HOSPITAL FOR WOMEN (Marylebone road, N.W.).—3 P.M. Lecture:—Dr. Roberts: Cases from the Wards.
ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—6 P.M. Dr. M. Dockrell: Paratuberculides (due to Tuberculous Toxins): I., Macular; II., Papular; III., Pustular; IV., Pigmentary. (Chesterfield Lecture.)
MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Lecture:—Dr. J. E. Squire: Phthisis in Old Age. (Post-Graduate Course.)
NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—Clinical Lecture:—Dr. A. J. Whiting: Hemiplegia.
HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Lecture:—Mr. T. H. Kellock: Abscesses in Connexion with Spinal Caries and their Treatment.

FRIDAY (26th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. StClair Thomson: Clinique. (Throat.)
POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Russell: Anæmia.
NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Clinical Lecture:—Sir V. Horsley: Surgery of the Nervous System.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1905, which was completed with the issue of Dec. 30th, were given in THE LANCET of Jan. 6th, 1906.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1905 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

THE LANCET AT THE RAILWAY BOOKSTALLS.

READERS who usually obtain their copies of THE LANCET at the bookstalls on the Great Western, the London and North Western, and the minor systems in connexion with these railways, are requested to communicate with the Manager, 423, Strand, London, W.C., if they experience any difficulty in getting copies of THE LANCET at these bookstalls, Messrs. W. H. Smith and Son's connexion with them having now terminated.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 18th, 1906.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 12	29·85	S.W.	0·16	57	53	37	46	47	Overcast
,, 13	29·60	W.	0·56	65	51	47	50	51	Raining
,, 14	30·13	W.	0·06	72	50	38	37	38	Fine
,, 15	29·92	S.W.	...	74	49	38	43	46	Cloudy
,, 16	29·91	S.W.	0·07	63	50	40	39	41	Fine
,, 17	29·88	W.	0·48	65	48	41	41	43	Cloudy
,, 18	29·64	S.W.	0·03	49	49	43	45	46	Raining

During the week marked copies of the following newspapers have been received:—*Liverpool Daily Post, Lancashire Post, Manchester Chronicle, Bristol Press, Belfast Newsletter, Leicester Mercury, West Hants Observer, Glasgow Citizen, Yorkshire Observer, Leicester Advertiser, Portsmouth Independent, Newcastle Chronicle, Cardiff Mail, Bury Times, Wolverhampton Counties Express, Manchester Guardian, Glasgow Herald, Leeds and Yorkshire Post, City Press, Surrey Advertiser, &c.*

Communications, Letters, &c., have been received from—

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Q.—Q., Jubbulpur.

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